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FRACTURES OF THE CARPAL SCAPHOID*

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BOSTON

AMONG the more commonly undiagnosed fractures in our experience are those of the carpal scaphoid (os naviculare). During the last five years 17 cases have been observed by one of us (A.T.) in a college clinic. Particularly is it noteworthy that 11 (65 per cent) were old or previously unrecognized fractures.

The incidence of these fractures is especially high among young men active in sports in which violent hyperextension of the hand takes place. This has long been recognized and has caused the fracture to be called in France *fracture du gymnaste*.[1] Our cases have all occurred in young men between the ages of sixteen and twenty-five, and the incidence has been four times that of Colles fracture. At Boulder Dam, drawing from a wider and mostly older age group, Jaekle and Clark[2] observed 17 such fractures, as compared to 63 fractures of the radius. On the other hand, in a group of men similar in age to our patients but engaged in more extensive gymnastic work, Hopkins[1] observed 23 cases in twelve years, as against 2 Colles fractures. It thus seems evident that the trauma which in children produces a separation of the radial epiphysis and in adults causes Colles fractures may in the very young adult produce a fractured carpal scaphoid.

A B

FIGURE 1. *Case C. S.*

Film A, *taken elsewhere at the time of injury, is negative. Film* B, *taken six months after the injury, which had been unreported and untreated, shows a fracture through the proximal third of the carpal scaphoid.*

The diagnosis of these fractures, under a definite method of clinical and roentgenological examination, should not be overlooked. The standard signs are limitation of motion in extension and radial deviation, and tenderness over the anatomical snuffbox and on the palmar surface over the tubercle of the bone. However, there are numer-

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ous diagnostic pitfalls, the obvious one being the incorrect diagnosis of sprained wrist. Eleven of our patients failed to receive prompt treatment because their injury had originally been interpreted as a mild sprain. In 2 cases the youths consulted no one. The initial discomfort was so mild that they did not report their injury, although they were examined daily, and not until five months after the original injury was it reported, when a few symptoms persisted. In 8 cases occurring outside the college the injury was reported to some higher authority (squad trainer, camp doctor or family physician), who incorrectly treated a sprained wrist without taking an x-ray photograph. In 1 case the boy's family physician took an immediate x-ray film, which was negative, yet by the end of six months there had occurred cystic absorption and disintegration into two fragments (Fig. 1).

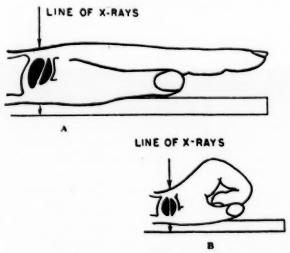


FIGURE 2. *The Optimum Position for Demonstrating by X-Ray a Fracture of the Carpal Scaphoid. (Reproduced from* American Journal of Surgery *[44:101, 1939] by courtesy of the publisher.)*

The failure of some of these fractures to be demonstrated in the initial x-ray plates has been mentioned in almost every recent article[3–6] on the subject. In some cases it seems that the central beam of the x-ray fails to coincide with the plane of fracture. Better views may be taken with the fist clenched and the fingers resting on the x-ray plate, with the palm down in extreme ulnar deviation and with extreme pronation (Fig. 2).

If a true fracture is undetected and motion is permitted, absorption of bone occurs along the fracture line, and the fracture becomes more evident in one or two weeks. If the fracture is put rigidly at rest, the process of absorption is arrested and reversed, and union gradually takes place. This is very well illustrated in another of our cases (Fig. 3). In order to rule out all possibility of fracture, it is good judgment to subject every persistently painful wrist to x-ray examination at weekly intervals.

Several classifications of carpal scaphoid fracture have been used in the literature. We prefer the anatomical one. Fractures through the tuberosity are extra-articular and always heal in four to six weeks by bony union — we have treated 1 such case; for the purposes of this discussion, this type of fracture need not be further considered here. Fractures through the middle and proximal thirds of the body constitute the great majority of injuries. The fresh fractures show little or no displacement. The separation seen later is the result of absorption.

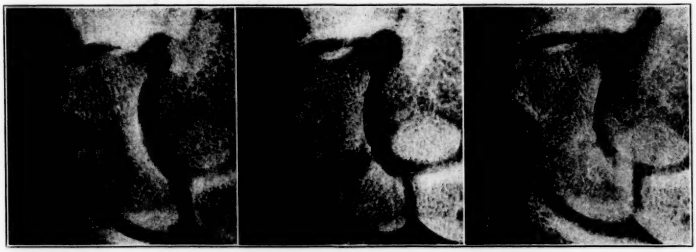
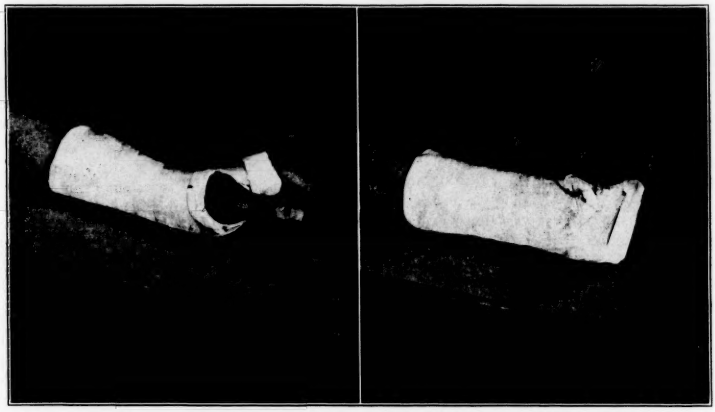


FIGURE 3. *Case H. E. R.*

Film A, *taken at the time of injury, is negative; film* B, *taken one month later, shows cystic absorption along the fracture line; film C, taken sixteen weeks after immobilization, shows bony union.*

The treatment of acute fractures has been well standardized, and provided that the diagnosis is promptly made and that effective immobilization is instituted and maintained, fractures of the body of the scaphoid unite in a very high percentage of cases. In our series 5 out of 6 such cases (82 per cent) united promptly by bony union; in the

case with non-union, the fracture involved the proximal third of the body, and in the cases with union the tuberosity was fractured in 1 and the distal or proximal third of the body in 4. Jaekle and Clark[2] and Hopkins,[1] as well as to our own. There is very definite evidence that the high waist-and-body fractures are not necessarily foreordained to bad results, but that, on the contrary, immobilization gives a high percentage of excellent results.



A B

FIGURE 4. *The Ideal Type of Cock-Up Splint, Using Thermex and Castex as Splinting Materials.*

and Clark,[2] with an ideal set-up for prompt recognition and early treatment, obtained bony union in 87 per cent of cases. It is certain that early, effective immobilization is the key to good results. Conversely, the motion of five articulating surfaces in frequent movements of the hand is the one certain common cause of absorption along the fracture line and subsequent non-union. We cannot agree with the advocates of immediate open operation on fresh fractures. Cravener and McElroy[3] and Adams and Leonard[7] base their treatment on the premise that simple immobilization treatment results in a high percentage of non-unions. This is contradictory to the experience best apposed with the wrist in 40 to 50° of extension and slight radial deviation. This position has become a fairly standard one. In order further to splint the scaphoid by cradling it between the flexor and extensor tendons of the thumb, Soto-Hall and Haldeman advocate immobilizing the entire thumb. Using a light, unpadded cast, we have obtained union without such immobilization.

The optimum anatomical position for immobilization has been carefully worked out by Berlin[8] in a dissection of 60 wrists, likewise by Soto-Hall and Haldeman.[9] Uniformly the fragments are

TABLE 1. *Data on Cases with Non-Union.*

CASE	SITE OF FRACTURE	TIME INTERVAL AFTER TRAUMA	PAIN	REMARKS
R. G.	Body, proximal third	Immediate	None (1 yr.)	Law student
		mo.		
G. F.	Body, middle third	3	None	Three years varsity football and hockey
J. G.	Body, middle third	4	None	One year freshman football; 1 yr. varsity football
	Body, middle third	12	Occasional	
R. T. G.	Body, middle third	4	None	Bone-peg operation; union; postoperative complications; 2 yr. varsity baseball
C. C. S.	Body, proximal third	6	None	Two years junior varsity football
S. K.	Body, middle third	12	Occasional	One year freshman football; 3 yr. varsity football
	Body, middle third	24	Occasional	
R. C. C.	Body, proximal third	19	None	Not in organized sports
J. W. H.	Body, middle third	24	Occasional	Dental student; catches drumstick while playing drums in orchestra
C. H.	Body, proximal third	48	None	Graduate student
R. C.	Body, proximal third	60	Occasional	Football line coach; considered injury a sprain

This greatly increases the utility of the hand during the necessary period of fixation. An ideal material for the usual cock-up cast is the recently demonstrated Thermex splint[10] covered with a light Castex cylinder.[11]

In our series, 11 fractures were detected from three months to five years after the initial injury (Table 1). We have had an unusual opportunity to follow these cases of non-union intimately over a period of years, and from close personal discussion to evaluate the degree of their disability. One patient was advised elsewhere to have a bone-pegging operation and obtained with operation a good result and bony union. His convalescence was prolonged by a complicating phlebitis. However, today he has a painless wrist, but with marked limitation of motion. None of the other 10 patients considered their symptoms sufficiently bothersome to warrant operation. In some cases there was slight weakness, slight limitation of extension and, to a lesser degree, limitation of flexion at the wrist. Most of the patients had no pain, and all performed very active work. As we have followed these cases year after year there has been, strikingly, no single instance of significant disability because of non-union.

The results of operative treatment of old non-union cases have been good. The operation consists of multiple drilling (Speed,[4, 12] Edelstein,[6] Soto-Hall and Haldeman,[9] or more commonly of inserting a tiny bone peg (Murray,[13, 14] Burnett,[15, 16]) through the anatomical snuffbox. Cave[5] has reported bony union in 4 (57 per cent) of 7 pegged cases, with all cases rendered free from pain and functionally almost perfect. Burnett[16] reports 5 pegged cases, again with good clinical results: bony union in 2, and fibrous union in 3. Murray[13, 14] reports 16 cases, all with excellent functional results and all united. Comparable results have been reported with drilling. Böhler[17] and Schnek[18] have been able, by very prolonged immobilization (six months or more), to obtain union in these late cases.

From our observation, then, the disability in cases of non-union is rather insignificant and often negligible, even in periods up to five years after the fracture. Hopkins[1] found all his 23 patients able to work as physical directors. We believe that only those patients with definite disability should be urged to have the open operation of bone pegging or drilling. It would seem today that there is no place for the operation of removing both bony fragments. Occasionally removing the proximal fragments does relieve pain, as Cotton[19] so ably demonstrated.

The cause of non-union is related to the degree of motion allowed, not alone to the poor blood supply of the scaphoid. Johnson[20] has shown, in a careful study of experimental fractures of the carpal scaphoid in dogs, that at least in these animals new blood vessels enter both fragments very rapidly, and via a drill hole especially rapidly. Adams and Leonard[7] found soft tissue interposed between the fragments in one late case of non-union — the first case to be operated on by inlay graft. Because the fresh fractures have slight if any displacement, we believe that soft-tissue interposition is usually secondary, after absorption has taken place.

Summary

Among 6 acute cases of carpal scaphoid fracture, in a series of 17 cases among men of college age, treated with immediate and prolonged immobilization, 5 united. Rigid immobilization should be carried out for twelve weeks, with an additional four weeks' partial immobilization in a supportive gauntlet.

The position we prefer for immobilization is extreme extension of the wrist, with radial deviation and the thumb exposed.

In 11 old cases, either the patient failed to report the injury or the surgeon who first saw the case overlooked the fracture. In order to avoid this, we suggest that every sprained wrist that does not respond to treatment be x-rayed at weekly intervals.

In 10 out of 12 ununited fractures, the disability was so slight that the patients themselves would not admit the necessity of an operation. Seven of these 10 patients participated actively in football and other strenuous sports.

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CHANGES IN PUBLIC-HEALTH PRACTICE*

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BOSTON

NO ACCURATE history of the world's progress would fail to include a most fascinating chapter devoted to the story of man's conquest of disease. Quietly and unobtrusively, without the blare of the trumpet or the beat of the drum, without the stimulus which comes from the flash of the bayonet or the gleam of the sword, many unsung heroes have sacrificed their lives in quest of knowledge, that disease might be conquered, health protected and life extended. The physician and the nurse at the bedside of the sick and in the clinic, the laboratory technician, the sanitarian and other workers in the field of public health have waged constant battles with man's most persistent enemy: disease. In ancient times and throughout the so-called Dark Ages, and up to a comparatively recent period, as we measure the slow progress of time, the army of death marched roughshod, exacting its toll of millions of lives. Smallpox, bubonic plague, cholera, typhus, yellow fever, malaria and other diseases played their part in the mass slaughter of human lives.

The dawn of a better day was ushered in less than one hundred years ago by what has been described so aptly as the "Great Sanitary Awakening," this in essence symbolizing an increasing appreciation of the importance of satisfactory environmental sanitation and the great need for better living and working conditions. Students of public-health history appreciate in full measure the epochal contributions of the English sanitarians, Simon and Chadwick, and in a marked degree the vision of Lemuel Shattuck here in Massachusetts. The part played by these men and the influence of their efforts marked the beginning of what we conceive to be the modern public-health movement. Shortly after the Civil War the contributions of the immortal Pasteur, of Koch and of their collaborators, scoffed at in a marked degree by the skeptics of that day, crystallized in the acceptance of the germ theory of disease. Increasing bacteriological knowledge, revealing the causes of certain diseases, became an all-important factor in the prevention, control and treatment of illness. The influence of Pasteur and Koch reached across the Atlantic to the United States, where Welsh, Pruden, Biggs, Park, Sedgwick, Chapin and some of the founders of the Massachusetts Association of Boards of Health played a part in the formulation of sound public-health principles and in the adoption of accepted public-health procedures. To the emphasis on environmental sanitation there was added the effort for the control of the communicable disease.

Here in Massachusetts, in accordance with the recommendation of Lemuel Shattuck, included in his epochal report of 1849, the State Board of Health, the first in America, was founded in 1869. The major efforts of health departments for the following two decades were in the field of sanitation and the furtherance of the control of certain communicable diseases. The year 1890, when this association was founded, marked the beginning of twenty-five years of uninterrupted tremendous public-health progress in America. Among the many significant contributions of this quarter of a century were an appreciation of the importance of the protection of our water and milk supplies, and the development of the procedures by which this might best be accomplished, the contributions of Walter Reed and his colleagues in furthering the control of insect-borne diseases, the utilization of antitoxin in the treatment of diphtheria, the discovery of the carrier as a cause of disease and a source of the spread of infection, and the realization of the importance of sanatorium care in the treatment of tuberculosis, reflected in the establishment at Rutland by the Massachusetts Department of Public Health of the first sanatorium in America. Progress in infant and child welfare, first emphasized by Budin and his associates in France and by Koplik in New York, resulted in the establishment of the first department of child hygiene by the New York Department of Health in 1908. This was preceded by the establishment of school medical inspection in the Boston Health Department in 1894. Campaigns for clean milk bore fruit, and this began to be reflected in a reduction of infant deaths. The contributions of Biggs to varied aspects of health administration, the contribution of Park to laboratory practice under municipal auspices, the furtherance of the principles of immunology — these are but some of the outstanding landmarks of what may be termed the most fruitful years in public-health history.

What has been done in the quarter of a cen-

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tury from 1915 to today is a familiar public-health chapter to most of us. In retrospect it is fair to emphasize that public health has, indeed, marched a long way since a hundred years ago, a date that marked the beginning of the first social consciousness of the need of a more wholesome sanitary environment, followed by the application of bacteriological knowledge for the control of communicable diseases, and culminating in the present appreciation of the significance of personal and community health.

In 1921, in commemoration of the celebration of the fiftieth anniversary of the founding of the American Public Health Association, a historical volume was published entitled *One Half Century of Public Health*. The period spanned was from 1871 to 1921. The prevalent public-health programs and practices of 1871 were in essence comparable to those of 1890. I should like, therefore, to refer to a statement appearing in the above-mentioned volume written by Stephen Smith, first president of the American Public Health Association. He calls attention in his article to a reply made by a sanitary health official, or health warden, as he was then called, of New York City, functioning in the period mentioned, who when asked, "What do you do when called to a case of contagious disease?" replied: "I go to the house and call the people into the street and give my orders to burn sulphur. I never go into the house."

From this unbelievable, superficial and erroneous concept of disease control, which was the practice of that day, public health has indeed traveled far in its onward march, changing the map of the world for the ultimate good of organized society.

When this organization was first founded, the methods for the protection of our water and milk supplies were exceedingly superficial and unsatisfactory, with a consequent high prevalence of water-borne and milk-borne diseases. Laboratory practices were lacking, and terminal fumigation, now discontinued, was very much the practice of that day. With increasing bacteriological knowledge came the realization of the active part played by man in the spread of disease. It was recognized that disease was spread by the pollution of water and milk, by insects, by contact with the sick and by carriers, and out of the acceptance of this knowledge developed the modern health program of today.

I believe it opportune at this time to attempt to relate the evolution of the public-health program during the last fifty years to the improvement in health conditions, reflected by the constant reduction of morbidity and mortality, and I shall take the liberty of presenting some vital statistics from the reports of the Boston Health Department. The figures presented are for the year of 1890 and for every decade thereafter. They present a picture of diminishing morbidity and mortality from preventable causes, and also show an increase of those diseases found in middle and later life, a picture familiar to students of vital statistics, who recognize the principle that as we prevent unnecessary deaths among our young, and deaths from preventable causes in other age groups, we produce a very much larger number of people who live to that period of life in which is found an increase of the diseases of adult, middle and later life. The vital statistics of Boston present a reasonable cross-section of prevalent health and disease conditions in many parts of the United States for the periods enumerated, and the mortality rates from specific causes may be considered as typical, by and large, for the country as a whole.

Particular attention is called to the pleasing figures which reveal the halving of the general death rate during the last half-century (Table 1).

TABLE 1. *Death Rates in Boston over a Period of Fifty Years.*

YEAR	GENERAL MORTALITY*	INFANT MORTALITY*	TUBERCULOSIS	SCARLET FEVER	DIPHTHERIA	TYPHOID FEVER	HEART DISEASE	CANCER	DIABETES
1890	22.6	169.3	332.7	9.3	102.8	41.4			
1900	20.8	146.3	250.6	32.2	95.6	29.4	174.8	78.2	13.5
1910	17.2	126.7	172.6	8.7	23.4	11.6	215.5	102.8	20.0
1920	15.5	100.8	109.6	9.5	18.7	1.5	199.8	129.2	23.4
1930	14.1	70.2	68.5	5.0	2.9	0.8	258.4	171.0	30.0
1939	11.1†	42.1	44.7	0.1	0.4	0.4	353.0	203.5	38.7

*Deaths per 1000 population; the balance of the figures are deaths per 100,000 population.
†Corrected for residence.

It is pleasing, too, to call attention to the tremendous reduction in the tuberculosis death rate and in the deaths from diphtheria, typhoid fever and scarlet fever. Contrasted with this improvement, deaths from heart disease have more than doubled, and those from diabetes and cancer have almost tripled.

It is pertinent to relate these progressive improvements to the changes in public-health programs, by a presentation of the practices of 1890 and of the decades that followed, as compared

with those of the present day. In 1890, departments of health concerned themselves in the main with environmental sanitation, including increasing efforts for the protection of water supplies, sewage and garbage disposal, abatement of nuisances, fumigation, attempts at control of certain communicable diseases, and terminal disinfection following them.

A study of the annual report of the Boston Health Department for 1890 reveals the expenditure of approximately $88,000, as contrasted with almost $1,000,000 spent in 1939. One of the very largest items of the expenditure for 1890 was the cost of disinfection and fumigation, with a record of 93,000 disinfections of cellars, cesspools, alleys and privies, and the disinfection of 4300 rooms, following the presence of highly prevalent contagious disease. This report of the Health Department calls attention to the use of 23,424 pounds of sulfur and 2950 pounds of bichloride of mercury, and comments on the recognition of disinfection as one of the recognized factors in the prevention and control of disease. This evident emphasis on sanitation was supplemented by efforts for the isolation of infected persons.

While this tremendous amount of disinfection was going on, 333 out of every 100,000 of our population died from tuberculosis, 103 from diphtheria, 41 from typhoid fever and 9 from scarlet fever. Today the Housing and Sanitation Division performs the accepted necessary public-health functions of this important branch of the Health Department service. Soap and water, fresh air and sunlight have replaced fumigation, with more beneficent results.

What is the comparative picture? In 1939 we had less than 45 deaths for 100,000 inhabitants from tuberculosis, 0.1 from scarlet fever, 0.4 from diphtheria, 0.4 from typhoid fever. In 1890, with a population of 448,000, as contrasted with the present population of about 840,000, there were actually 400 deaths in Boston from diphtheria, as against 1 this year, 41 from scarlet fever as against 1, 155 from typhoid fever as against 1. If the infant death rate prevalent in 1890 were applied to the number of live births in 1939, we should have had 2600 deaths of children under one, as against 650 actually occurring last year.

In 1900, with a population of 650,000, Boston had 553 deaths from diphtheria, 143 from typhoid fever, 181 from scarlet fever and 1400 from tuberculosis, in spite of the disinfection and fumigation of 13,798 rooms, and the use of 55,000 pounds of chloride of lime and over 6800 pounds of other chemicals.

By 1910 the population had grown to 673,000 people. We had 3453 cases of diphtheria, 2079 cases of scarlet fever, 630 cases of typhoid fever and 1163 deaths from tuberculosis, in spite of the disinfection of 11,744 rooms following contagious disease and 12,358 disinfections for other purposes.

In 1920, with a population of over 750,000 in Boston, which was rapidly approaching its present size, we had 1966 infant deaths, 140 from diphtheria, 71 from scarlet fever, 956 from tuberculosis and 141 from typhoid fever.

By 1930 the Health Department had grown in stature and was spending $1,000,000 for health purposes; the health units, first conceived locally in 1915, were functioning, tuberculosis clinics had been established on a decentralized basis, the nursing service was extended and generalized, and immunization against diphtheria was being carried on in an extensive way. The tuberculosis death rate had dropped to 69, that of diphtheria to 3 and the infant mortality rate to 70. Dental care was being rendered for 56,000 children. A health educator was employed, and other accepted public-health activities had been added to the program of the Health Department.

What have been the results of this half-century of public-health effort in Boston, as in many other communities where reasonably adequate funds have been provided and expended for the conduct of those activities which prevent disease and conserve health? As already mentioned, the span of life has been materially lengthened, the death rates from all causes have been almost halved, the infant mortality rate reduced by 75 per cent, that of tuberculosis by 89 per cent, and diphtheria and typhoid almost eliminated as a cause of death in our community, while deaths from scarlet fever have become negligible.

What have been the changing practices that have brought about this remarkable improvement? Hermann M. Biggs, to whom we owe a great deal for the furtherance of administrative technic in the field of public-health administration, proclaimed that public health was purchasable, and that within reasonable limitations communities might determine their own death rates. What did he mean by that? He meant in substance that the wise expenditure of adequate funds for the conduct of essential public-health activities would markedly control the prevalence of preventable diseases and deaths from many causes. What are these activities that he had in mind, and what part have they played in influencing the health of the American people? Allusion has already been made to the significant effect of the application of sound procedures for the sanitation of the environment, the protection of our water and milk supplies and the control of communicable diseases. The place

of the laboratory as a significant component part of a modern health department has been amply demonstrated. The significance of immunological agents has been demonstrated beyond measure as a factor in the prevention of disease.

Very fortunately for organized society, this century has been marked by a number of significant public-health movements which have required the participation of the individual. The child-hygiene movement, the campaign for the control of tuberculosis, the mental-hygiene movement and the social-hygiene movement, waged by official and voluntary agencies, have stimulated the imagination of the American people, and have resulted in higher standards of individual and community health. Clinics of various types, carrying on the functions in the above-mentioned fields and having for their objectives the prevention and control of disease, have become increasingly utilized by armies of people, who have demonstrated by their reaction that they truly believe that an ounce of prevention is worth a pound of cure.

The progress in the field of child health has justified the frequently expressed belief that we are living "in the century of the child." Allusion has already been made to the effort in France for infant welfare and of the work in New York City on infant feeding by Koplik, who in the late eighties and early nineties stressed the significance and importance of breast feeding and clean milk. There developed at the beginning of this century increasing interest and programs for the conservation of the lives of our young children, in so marked a degree that we now proclaim the infant mortality rate to be an index of a community's intelligence. This implication is based on the premise that we may safeguard the lives of our children and prevent unnecessary deaths among the young by the development and maintenance of adequate programs for the conservation of child life.

It is important to call attention to the significant relation between satisfactory prenatal care and maternal and infant welfare. Studies carried on in Boston, in Philadelphia and by the Maternity Association of New York have proved that the death rate among expectant mothers receiving adequate prenatal care was about half that among those lacking such medical supervision. A study of 1000 maternal deaths, conducted by Dr. Susan Coffin for the Massachusetts Department of Public Health, revealed the absence of adequate prenatal care among 890 of these expectant mothers. Today in every intelligent community reasonably adequate services exist for prenatal care, either in the offices of the medical profession or obstetrician or in organized clinics under the auspices of the health department or private agencies. Prenatal care has done much to reduce the hazards of the toxemias of pregnancy, injuries at birth and prematurities, and to lower deaths among infants. There is, however, much room for further improvement in deaths occurring during the first month of life.

Both voluntary and official agencies have concerned themselves with the problem of infant, preschool and school-child health. Milk stations and baby and preschool clinics have served as the headquarters for the dissemination of information, and for the education of mothers as to the very best methods for keeping well children well. Among the administrative methods for the conduct of this work has been a co-operative plan developed in Boston between the Health Department and the Harvard, Tufts and Boston University medical schools, whereby pediatricians from the teaching staffs man the clinics and are reimbursed by the Health Department. Advantage is taken of the presentable opportunity for teaching medical students preventive pediatrics. It is in the fields of child health and tuberculosis that the public-health nurse has made a lasting contribution.

Newborn babies are visited shortly after birth by nurses of the Health Department, and mothers are urged to take their babies either to their own family doctor or to the organized clinic for periodic medical supervision. Here children are examined, vaccinated against smallpox and immunized against diphtheria. Breast feeding is stressed, and wherever possible the use of pasteurized milk and the preparation of the proper formula are taught. When children arrive at the preschool age, the so-called neglected age, every effort is made to maintain the continued interest of parents in the physical and mental health of the child. There is, however, room for much further progress among this age group.

We are familiar with the frequency with which we find faulty teeth, defective vision, defective hearing, malnutrition, faulty posture, functional or organic heart disease and occasionally tuberculosis among our school-child population. Large sums are being spent in the United States for the medical inspection of schools and physical examinations for the discovery of remediable defects. Emphasis should be placed on the importance of increasing our efforts in the direction for the correction of defects found. An example of excellent service in this field is the program carried on by Dr. James Keenan, his school physicians and nurses, in the Boston public schools, while the Health Department assumes the responsibility

for medical inspection in the parochial schools.

The care of the mouth and primary teeth is receiving fitting recognition. The Forsyth Dental Infirmary in Boston, the Eastman Clinic in Rochester, New York, and the Guggenheim Clinic in New York City are outstanding examples of endorsed institutions concerning themselves with prophylactic dental care. It is hoped that what is being done for children today in the way of preventive dental care may bring about higher standards of dental health for the American people. An outstanding example of municipal interest in this field is the program of the Boston Health Department, whereby a corps of approximately twenty dentists and ten hygienists of the Forsyth Dental Infirmary carry on prophylactic dental service in the health units maintained by the city. This personnel is reimbursed from tax funds.

Attention is being given to the subject of proper nutrition as a factor in normal growth and development, to the eradication of faulty food habits and to the establishment of proper and well-balanced diets, and a keener appreciation is being shown of the significance of the vitamins.

The attack against tuberculosis represented what may be termed the second public-health movement at the beginning of the present century. The persistence of Trudeau established the philosophy of sanatorium care. The voluntary agencies in this field not only did much to lay the foundation for a better understanding of the methods by which tuberculosis might be controlled, but also in the formative years conducted clinics for diagnosis and treatment. Case-finding, the isolation of the infected person, the rounding up of contacts who have been exposed, occupational adjustments and pneumothorax are all a part of the modern campaign for coping with this problem. Today every health department of appreciable significance either maintains, or sees to it that there exist in the community, adequate facilities for tuberculosis control.

For a number of years the subject of the control of venereal diseases was approached, except in rare cases, with much diffidence and hesitation. Gonorrhea and syphilis represent an important public-health problem. Stimulated by the efforts of the National Society for Social Hygiene, and more recently by the vigorous challenging efforts of Surgeon General Parran, and with the assistance of federal funds, a worth-while program is constantly making further progress. The Massachusetts Department of Public Health, with the aid of the above-mentioned funds, not only assists in the maintenance of a number of venereal disease clinics, but stimulates the upholding of adequate standards. Of particular significance is the organization of facilities for rounding up the lapsed cases in this field.

As the clock of time has advanced during the present century, there has been increasing recognition of the relation of housing to health and to the control of disease. We have recognized that adequate light, air and ventilation and the avoidance of overcrowding are minimum requirements in the field of human needs.

Massachusetts, as in many other directions, blazed the way in the formulation of necessary legislation for the protection of the health of its workers. Provisions for factory inspection, minimum hygienic standards in places of employment, protection against the hazards of industry and workmen's compensation are but some of the safeguards in effect today. The sanitary inspector has a vital place in the public-health program, although some of his activities have changed in character.

There is a need for increasing recognition by those responsible for community health of the problems of mental hygiene and mental disease. A ray of hope is offered by the expansion of the child-guidance clinics conducted under official or voluntary auspices, which deal with the problem of faulty habits in children and the need for the correction of the environment to which the child is exposed. Certainly the tragically high prevalence of mental disease should focus attention on the need of more prevention.

Allusion has already been made to the fact that we are living in an era in which the emphasis is on personal health. Vigilant health officers appreciate the value of an understanding by the public of the functions and objectives of the health department. Healthful living needs interpreting in simple, understandable language. The spoken word in the clinic, in the lecture hall and over the radio, and the visit of the public-health nurse, can be opportunely utilized for educational health propaganda. The leaflet, the poster, the pamphlet may all serve the useful purpose of making people more health-minded. Here and there health educators employed by health departments are living examples of changes in public-health practice from police methods to education.

As deaths from preventable causes have been lessened and the average span of life increased, a large proportion of our population are living to middle and later life, with a consequent increase of the diseases prevalent in the older groups. Among these illnesses are cardiovascular disease, cancer and diabetes. This newer public-health problem should be the concern of the health officer. While this does not imply that he must necessarily conduct medical activities for the treatment of these diseases, it is his obligation both

to educate the public as to methods for their contact, and to see that there are in his community an organized medical profession, and clinics and hospitals to cope with these problems.

The health officer today integrates the efforts of administration — the findings of the statistician, the medical inspector, the public-health nurse, the milk and food and sanitary inspector, the laboratory technician and the school physician — with those of the representatives of the voluntary health agencies. Today, in cities of varying size, health services are frequently conducted on a district basis. Radiating out of health centers, founded to bring together under one roof in a spirit of service and of team play all concerned with the problem of health and welfare, these services attempt to present a united front against sickness and death.

Statistical figures appearing in this effort to point out improvements in health because of changes in public-health practices tell but a part of the story. We can do much better. There are still too many deaths from preventable causes. We can add more years to the span of life, since we have knowledge and methods at our disposal possessing rich lifesaving values. We must create by education and by the conduct of adequate programs a greater desire on the part of everyone for life's most treasured possession, vigorous physical and mental health. With an appreciation of the dryness of figures, I close with the words of Dr. Charles V. Chapin, to whom all those interested in public-health progress owe so much.

> Figures do not measure the terrors of epidemics, nor the tears of a mother at her baby's grave, nor the sorrow of the widow whose helpmate has been snatched away at the prime of life. To have prevented these not once but a million times justifies one-half century of public health.

330 Brookline Avenue.

BOSTON MEDICAL LIBRARY

Report of the Librarian for 1939

DURING 1939, the Boston Medical Library enjoyed an exceptional year. It was used by over 10,000 persons. Thirty thousand books or pamphlets were spread before those individuals; in other words, about 10 per cent of the 300,000 items left the library shelves to fulfill their designed purpose, that of transmitting men's ideas as recorded on the printed page to the present generation. Some of the 30,000 spoke the language of yesterday; many the current verbiage of our day. Old, middle-aged, adolescent or infantile, all gave to the reader, one hopes, a source of inspiration to write better his own words or to treat more efficiently the sick who came under his care. To serve 10,000 persons in a year is no mean task; to serve them well is the standard set by the Boston Medical Library. The continued support of old members and the influx of new members in 1939 indicate that the library has maintained its standard and served its purpose.

Periodicals

As noted in last year's report, one of the important functions of the Library is to maintain for reference the current periodicals that contain the essence of contemporary medical thought. In 1939 the library increased the number of periodicals to 822, still falling short of the 1937 record of 907. We have thus added to our collection in the last year, and by adjustment with neighboring libraries have provided to the Boston medical area most of the journals likely to be called for by our readers. As the rarely sought periodical can be made available in a few days from libraries outside Boston, we believe that our needs were well met. Unfortunately our funds have prevented us from binding as many journals as we desired: only 584 volumes in 1939, as compared with 737 in 1938 and 900 in 1937. In spite of this, the journals are reasonably well preserved in temporary binders and will not suffer for some years. The librarian tenders his thanks to the members and organizations that contribute periodicals. Not a few of our state journals and many others are received from the *New England Journal of Medicine*. Many local medical societies have again come to our aid in helping to pay for foreign periodicals.

Books

Our main source of new books continues to be, fortunately for the library, the *New England Journal of Medicine*. These, a total of 335, were reviewed in 1939 by our generous members and a large proportion turned back to the library. To the reviewers the library is again greatly indebted. By their kindness the library maintains a current file of books, funds for the purchase of which are not at hand. A few new books come from other sources: donations from library members, gifts from authors and review copies from the *Bulletin of the Medical Library Association* and the *Journal of Bone and Joint Surgery*. These books are con-

stantly in demand and are fulfilling a need, especially for students. Our book funds allow for the purchase of replacements and a few books not received by the Book Review Department.

Rare Books and Books of Reference

To the Bullard and Hyams collections a few items have been added. The funds are nearly used up and only occasional purchases can be made. The collections are being used and correlated with similar collections elsewhere. We are constantly in touch with the Rare Book Room at the Harvard College Library and with the Boston Public Library. Additions to our books are known to others and we, in turn, keep in touch with the activities of our neighbors. We look at the problem in a broad manner, refuse to compete or duplicate, and always keep in mind the growth of medical and scientific literature in Boston and its vicinity. To the true scholar, a book near at hand is practically as valuable as a book at hand. The *Union Catalogue,* now nearing completion, is his most valuable asset.

Our stock of reference books is constantly maintained and augmented. Money spent for this type of book is money well used; items of reference soon become rare, almost never obsolete. Our error is usually that of not buying enough copies when issued; with covers worn off and dog-eared pages, how often we wish we had a second, fresh copy as the years pass. The Harvard College Library, the Boston Public Library and the Massachusetts Historical Society aid us in acquiring the more expensive and rarely used reference books. Our collection is surprisingly complete, however, thanks to the director's long interest in books about books and the indispensable material that subjoins a superb collection of fifteenth-century books. Rarely does one have to step outside our door to identify a rare book catalogued by a dealer.

The director's wide acquaintance with booksellers and their wares brings not a few choice items to our attention before they go into the general market. Our purchases have, with increasing regularity, become of the over-the-counter type, an advantage to both seller and buyer.

A paper on "The Plague Tracts in the Boston Medical Library" has recently been completed by the director and the librarian. The library has 30 items published before 1501 listed by Klebs and Sudhoff and 4 additions, including a *Pestblatt,* unique in character. The Bullard and Hyams collections thus furnish material for research. Some of the additional books are described for the first time in literature. Klebs's *Short Title List,* the value of which was pointed out in the 1938 report, has again been used as a basis for describing the books.

A visit to the Scandinavian countries during the summer, just before the outbreak of the war, enabled the librarian to renew old acquaintances, make new friends and purchase a number of items for the library. Important reference books on Danish, Swedish and Norwegian medicine were added to our collection and one incunabulum was acquired. The rare item was the *Naparsimasonut Ikiortiksat,* one of three known copies of the first medical book printed in Greenland. The book, in the Eskimo language, was set up on a hand press and printed in 1856. It is one of the earliest books printed in Greenland and describes the diet provided for the sick and the care of open sores. A friend in Copenhagen has made an English translation, and plans are under way to publish the small volume in facsimile, with an English and Danish translation. Vilhjalmur Stefansson, the Arctic explorer, has shown great interest in the book, and because of his well-known knowledge of the dietetics of the Eskimo it is expected that he will write an introduction. When purchased, it was thought that our copy was the only survivor except for the one in the Royal Library at Copenhagen. A third copy, however, has been found in the Krabbe Library,[1] now at Stanford University.

In 1929, the director[2] catalogued 179 items in the Bullard Loan Collection. With the passing years the collection has more than tripled. A new catalogue is badly needed, and it is hoped that funds will not long be delayed for assessing this remarkable group of books and placing the results in printed form. Much of the work on such a catalogue has already been done.

In contrast to the fifteenth-century collection in the library, separately housed, the books published in the sixteenth century, usually grouped in a section of books issued between 1501 and 1640, were widely separated on our stacks at the beginning of the year. Stimulated by *A Bio-Bibliography of XVI Century Medical Authors,* by Dr. Claudius F. Mayer, specimen pages of which were issued with Volume IV of the Fourth Series, *Index-Catalogue of the Library of the Surgeon General's Office* (1939), and by the interest in these items manifested by the Harvard College Library, we have begun to shelve this valuable group of books, particularly the English imprints, in Holmes Hall. They are separately classified, the English items being checked with Pollard and Redgrave's *Short-Title Catalogue.*[3] This practice is in keeping with the accepted procedure in the large libraries. In addition, special groupings of Americana are being made, as well as travel

books by doctors and books by distinguished authors, such, for instance, as the books owned and those written by Oliver Wendell Holmes.

Bibliography, Reissues and Other Matters

A few other projects indicating the activities within the library may be mentioned. The Welch Bibliophilic Society, formerly of Baltimore, has transferred its publication office to the library. The third book issued by the Society, containing Halsted's "The Employment of Fine Silk in Preference to Catgut," and "The Advantages of Transfixing Tissues and Vessels in Controlling Haemorrhage," is a fine reprinting of Halsted's famous papers. In addition to the two noted above, the book contains the accounts of his introduction of gloves, gutta-percha tissue and silver foil into surgical practice. Modestly priced, these volumes are not only a credit to the society but also a tribute to the skill and sense of fitness of the editor, Michel Pijoan.* The library welcomes the Welch Bibliophilic Society and will foster its work in the future. The librarian looks forward, moreover, to the time when the library will issue facsimiles of its important and in some cases unique treasures. The *John Rylands Facsimiles,* from the library at Manchester, England, have shown us what can be accomplished by this method of reproduction.

The *Bulletin of the Medical Library Association* is edited in the library, and the officers are grateful for the use of an editorial office. The library is also the headquarters of the secretary of the History of Science Society.

A bibliography of the French humanist, Symphorien Champier, is now being completed by Dr. Pijoan and the director. A preliminary hand list will be published in the *Bulletin of the Medical Library Association*. Other shorter bibliographies from the library are also being compiled for issue in the *Bulletin*.

The material other than books and pamphlets in the library calls for special mention. The Storer Medal Collection is extensive; it needs supervision and expansion. A curator has not been found. A similar situation exists in relation to our collections of medical prints, stamps and objects of medical importance. We have a good many objects, now rather ill-kept and unclassified. A retired physician might well interest himself in one or more of these collections. The librarian would welcome help from anyone who feels that the pressure of vegetative senility does not rest comfortably on his shoulders.

*The previous volumes are *The Interdependence of Medicine with Other Sciences of Nature* by William H. Welch (Baltimore, 1934), and *A Dissertation on Acute Pericarditis* by Oliver W. Holmes (Boston, 1937).

General Considerations

The library, as in past years, has been the recipient of many gifts. We welcome such varied treasures as the cane used by Oliver Wendell Holmes; a plaster model of the Ephraim McDowell house in Danville, Kentucky; Dr. Alexander Forbes's *Northernmost Labrador Mapped from the Air* (1938); books relating to Sylvester Gardiner; a menu card of the twenty-fifth anniversary (1886) of the Boston Obstetric Society; the seal of the Boylston Medical School, 1847; diploma cards; certificates; a bloodletting and cupping apparatus in fine condition; and material of a similar nature. To the generous donors the library extends its thanks.

Three medical schools in Boston donate funds to enable the library to keep open evenings: the Tufts College Medical School, the Harvard Medical School and the Boston University School of Medicine. In addition, two of the schools also join the library as professional members. The practice of supporting twenty fellowships by the Tufts College Medical School has been discontinued. It is hoped that this will not impair the usefulness of the library to the faculty of the school; individual memberships should take the place of those formerly sponsored by the college. Additional funds are also received, as noted in the report of the treasurer. Of particular importance is the fund received from the Harvard Medical School and others in aid of the *Union Catalogue,* a project so useful to us as well as to all our neighbors.

The death of Dr. Harvey Cushing, October 7, 1939, was a severe loss to the library. He was our only honorary member. Resolutions passed by the Board of Trustees have been published.[4] Before his death a bibliography[5] of his writings was published and an account of his seventieth birthday party,[6] April 8, 1939, followed shortly after he passed away. The library welcomes the news that his magnificent collection of books passes to the Sterling Medical Library at Yale and that a new extension to the present building is now being erected to house them, along with other important acquisitions. With Cushing's books go those of his devoted friends, Dr. Arnold C. Klebs and Dr. John F. Fulton.[7] Thus arises in New England another medical library center of primary importance. This welcome addition means much to medical culture and is near enough to be considered a not-too-distant neighbor. To this new venture go the best wishes of her older sister.

The librarian marks the passing of another old friend, Dr. Henry Barton Jacobs, of Baltimore. Although never a member, one of his last acts

was to send to the library a gift of money to preserve the books of Oliver Wendell Holmes.

The co-ordination with other libraries continues as in the past. New advances have been made in the exchange of material with the library of the Harvard Medical School. Our collection of theses is now largely catalogued. An informal committee has met occasionally to consider the broad vista of the medical library situation in Boston. Opinions are being formed which may be of considerable value in the future in regard to whatever problems have to be met.

Finally, the librarian again calls the attention of the members to our devoted, small staff. Without unusual personnel our library could not function with the small number of people employed. Even so, the library could use double the force and still not fulfill its most desired purpose. For the present, however, the year has passed without serious complaint and with much generous praise. The librarian knows how richly the praise is justified. The public, students, members and guests all come to our doors. Rarely does one leave without a realization that the Boston Medical Library plays an important part in the medical and cultural life of Boston. May it never play a lesser role!

HENRY R. VIETS, *Librarian.*

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FEVER THERAPY IN ALLERGIC DISEASE

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FEVER has been used as a therapeutic agent in bronchial asthma since 1931. Favorable results of varying degree have been reported by Feinberg, Osborne and Steinberg,[1] Halphen and Auclair,[2] Sheldon,[3] Phillips[4] and others. The technics have been varied, with temperature elevations varying from 101 to 107°F., durations from forty-five minutes to eight hours and the number of treatments from one to fourteen. In my cases of bronchial asthma less fever was found necessary than in those reported by other workers, so that although the series is small, I feel justified in reporting it.

Owing to the fact that the high temperatures that were first thought necessary for therapeutic effect constituted an excessively severe treatment for hay fever and urticaria, very few reports of this type of treatment in such conditions have appeared: Le Boutillier[5] mentions favorable results in 5 cases of hay fever; Trautman[6] reports negative results in 2 cases of hay fever, and favorable results in 1 case of urticaria; Litterer and Phillips[7] report favorable results in 80 cases of urticaria. Hence I believe that the hay fever cases presented here are a worth-while addition to the reports on the subject.

Fever therapy was administered in 32 cases of allergic disease. These were selected from about 100, seen over the same period of time, because they had not responded to simpler methods of treatment. No attempt was made to distinguish the different etiologic factors in the cases of bronchial asthma and hay fever that were treated. Nor is any attempt made to explain the rationale of therapeutic fever in allergic disease. I merely wish to show the results obtained from a certain minimal amount of fever treatment in these cases.

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TECHNIC AND MANAGEMENT

In the technic used, all fever treatments consisted of elevating the patient's temperature to not over 103°F. (axillary) for not longer than one hour. The majority of treatments consisted merely in elevating the temperature to 102°F. in twenty-five minutes, with immediate termination of the treatment, allowing the temperature to subside gradually to normal. This degree of fever is less than that reported by any authority except Phillips[4] and Le Boutillier,[5] and the duration is less than any other reported.

All fevers were induced in a humidified external-heating type of cabinet. No claim is made here for the superiority of one type of fever induction over another, so long as the method

used can be properly controlled and can produce a rapid induction of fever.

Care was taken in all cases to supply abundant fluids in the form of saline and glucose, so as to prevent bodily depletion. All premedication, preparation and supervision were conducted along recognized lines,[8] except that no sedation was given before or during fever, other than 40 gr. of sodium bromide to certain apprehensive individuals.

Bronchial Asthma

In patients with asthma, the management consisted in administering one treatment daily until what was considered to be a primary response to fever had been obtained. This response consisted in a decrease of bronchospasm, increase of moist rales, a productive cough and the subjective feeling that the attack was beginning to subside. The patient was instructed to return immediately if the improvement did not continue. An additional treatment was given in three days, if the attack was not completely terminated by that time. The schedule for further treatment consisted of instructing the patient to return on the first sign of an oncoming attack, when therapeutic fever was administered at any time of day or night after one hour's preparation of the patient.

No attempt was made to subject the patient to fever therapy when entirely symptom-free. As will be seen, the response to fever was so varied that I did not consider it justifiable to lay out any arbitrary course of treatments, but rather sought to individualize each case.

Table 1 shows the results of treatment in the cases of bronchial asthma. The statements as to the clinical improvement are based on the follow-up history, and on short periods of observation only of such patients as had subsequent attacks of sufficient severity to require calling a physician. No prolonged period of hospital observation was possible before or after treatment.

In Case 1 the patient obtained only temporary relief from fever therapy, but after tonsillectomy he improved clinically. In Case 3 the patient received a course of carbon-arc ultraviolet treatments in addition to fever therapy. In Case 13 the patient received "cold" vaccine throughout the following winter. In Case 15 the patient was instructed in and performed chest exercises. In the last three cases the concurrent treatment was thought to be only contributory to the results obtained. No other patients received treatment that could have been responsible for the clinical improvement they exhibited.

As shown by the table, 20 patients with bronchial asthma received an average of two and a half treatments in one year. Twelve had clinical remissions of three to ten months. This was in addition to whatever spontaneous remissions were usual in their cases. The remissions were followed by attacks of decreased severity, frequency and duration. Three other patients were clinically improved in that the attack terminated more abruptly and the subsequent attacks were less severe. Hence a total of 75 per cent of the cases showed clinical improvement. No case was asymptomatic one year following treatment. Seven of

TABLE 1. *Data on Cases of Bronchial Asthma.*

Case No.	Duration of Disease	Severity	Previous Treatment	No. of Fever Treatments		Length of Remission Following Treatment	Improvement: Lessened Severity and Duration	Relief from Adrenalin	
				First Year	Second Year			Before Treatment	After Treatment
	yr.					*mo.*			
1	7	Moderate	Usual*	2	Discontinued	Usual§	No	Yes	Yes
2	10	Intractable	Thorough†	4	—‡	3	Yes	No	—
3	50	Moderate (continuous)	Thorough	2	0	10	Yes	—	—
4	20	Intractable	Thorough	2	0	3	Yes	—	—
5	25	Intractable	Thorough	5	1	8	Yes	No	Yes
6	3	Mild (continuous)	Little	4	Discontinued	Usual	No	—	—
7	7	Severe	Thorough	1	—	3	Yes	—	—
8	30	Severe	Thorough	2	1	2	Yes	No	Yes
9	6	Severe	Thorough	2	—	Usual	Yes	—	—
10	19	Intractable	Thorough	3	0	Usual	Yes	No	Yes
11	8	Moderate	Usual	1	Discontinued	Usual	No	—	—
12	60	Intractable	Thorough	4	—	3	—	—	—
13	24	Severe	Thorough	3	0	3	Yes	Yes	Yes
14	6	Severe	Usual	1	—	Usual	Yes	—	—
15	15	Intractable	Thorough	8	2	3	Yes	No	Yes
16	23	Intractable	Usual	1	0	Usual	Yes	—	—
17	4	Severe	Thorough	2	0	10	Yes	No	Yes
18	16	Intractable	Usual	1	0	3	Yes	—	—
19	50	Intractable	Little	2	0	Usual	Yes	—	—
20	57	Intractable	Little	1	Discontinued	Usual	No	No	No

*"Usual" signifies that the patient had been under good general medical management with little specialized treatment.
†"Thorough" signifies that the case had been thoroughly studied and treated from every conventional angle in a good hospital.
‡Dashes are used when the treatment did not extend over the time mentioned or the therapy specified was not used.
§"Usual" signifies no change in the interval between attacks.

12 patients under observation the second year had attacks that responded so easily to home medication that they no longer returned for fever or sought other medical advice.

Four patients who had been unable to obtain relief with adrenalin in any form for several years prior to fever therapy were able to obtain satisfactory relief for at least one year after therapeutic fever. No attempt was made to explain this, or to determine whether it was true of all cases improved by fever.

A variation was observed in the time and type of primary response to fever therapy when it was administered during the asthmatic attack. Although there are an insufficient number of cases to allow any definite conclusions, the fact that the response occurred at any time from the induction stage of the fever session until twenty-four hours later is worthy of note. In a few cases the attack terminated with so little productive cough that it was a surprise to the patient.

TABLE 2. *Immediate Results of One Fever Session in an Attack of Bronchial Asthma (by Number of Cases).*

CONDITION	DURING FEVER	AFTER FEVER 1–3 HR.	3–6 HR.	12–24 HR.	24–48 HR.
Improved	7	10	10	15	11
No change	8	10	6	5	9
Worse	5	0	4	0	0

As shown in Table 2, in 11 cases only one treatment was needed to cause a remission. Of the remaining 9 cases that showed no change from twenty-four to forty-eight hours after fever, a second treatment was necessary in 3 cases and a third treatment in 2. In Case 13 the patient, who had been constantly asthmatic for eighteen months, received one fever session every other day and obtained no relief until after the fourth session, when she had a complete remission. In 3 cases there was a relapse after obtaining a primary response to fever.

Hay Fever

The following cases of hay fever were observed frequently throughout the season, so that the follow-up is reliable. The management of the cases in no way differed from that of those of bronchial asthma. In hay fever the primary response to fever was considered to be a decrease in conjunctival irritation and in edema of the nasal mucous membrane. The treatments were repeated until this result had been obtained to a lasting degree.

No concurrent specific desensitization treatment or local or general use of vasoconstrictors was permitted. The patients made no attempt to avoid offending pollens while under treatment or subsequent observation. The only concurrent treatment was the oral administration of calcium in cases where the patients did not drink milk, and the giving of potassium chloride, 5 gr. three times daily, when mild or transient symptoms were apparent the third season; the latter occurred in 4 cases in which marked improvement had been shown the second year.

Nine of 11 cases (81 per cent) treated showed clinical improvement (Table 3). One case was asymptomatic one season following treatment, and 2 were asymptomatic for two seasons following treatment. Two patients had symptoms so mild and transient that they did not seek medical attention. Four patients had mild symptoms the third season, for which they took potassium chloride, as mentioned above.

TABLE 3. *Data on Cases of Hay Fever.*

CASE NO.	DURATION	RESULT OF DESENSITIZATION	SEVERITY	NUMBER OF FEVER TREATMENTS FIRST YEAR	SECOND YEAR	THIRD YEAR	ASYMPTOMATIC	IMPROVED
	yr.							
21	7	—*	++	2	0	—†	No	Yes
22	5	—	++	1	0	0	No	Yes
23	3	Slight	+	1	Discontinued		No	No
24	2	None	+++	2	0	—	Yes	—
25	5	Slight	+	1	Discontinued		No	No
26	20	None	++++	9	4	0	No	Yes
27	2	—	+++	2	0	0	Yes	—
28	7	—	++++	1	0	0	Yes	—
29	11	—	++++	4	1	0	No	Yes
30	10	None	++	3	1	0	No	Yes
31	6	—	++++	2	1	0	No	Yes

*Dashes indicate that no desensitization had been done.
†Dashes signify that the patient was not under treatment at the time indicated.

The number of cases treated were insufficient to permit material conclusions as to the primary response in hay fever. All the patients treated exhibited some transient improvement immediately afterward, but in several this was not sufficient to be considered a remission. This cannot be explained on the basis of dehydration or change in acid-base balance, as care was taken to prevent any such change. In 4 cases only one treatment was necessary, in 4 two treatments and in 1 three.

Three patients had a remission after a primary response.

Chronic Urticaria

One case of chronic urticaria was treated. A sixteen-year-old girl, who had suffered for three years from severe bronchial asthma and hay fever, the latter of which at the time of treatment was partially controlled by eliminative diet and specific desensitization, also suffered from urticaria of eight months' duration, which was present daily, and much worse at night.

The first fever treatment was given February 25, 1939, and was followed by a remission of the urticaria for five days, and then a recurrence worse than before. The second fever therapy on March 8, 1939, was followed by remission of the urticaria for seven months. Hay fever was slight or transient through the 1939 season. There was complete remission of the bronchial asthma for four months, and only mild symptoms were noted the subsequent seven months.

Reactions to Fever

Although no attempt is made to interpret reactions, what was considered to be such was noted in 6 cases. This fact is mentioned here merely because it may prove to be of significance in determining the mechanism of the effect of therapeutic fever on allergic disease.

Four patients with bronchial asthma experienced very severe attacks three to six hours following the fever session, after they had received some primary relief. One patient with hay fever, sensitive to timothy, ragweed, goldenrod and paintbrush, developed urticaria over all exposed areas of the body while working in a hayfield the day following fever therapy. No previous history of urticaria in this case was obtained. The patient suffering from chronic urticaria developed an acute attack during the fever session while the temperature was subsiding to normal. For some reason the lesions did not itch.

Discussion

No claim is made as to the cure of bronchial asthma or of any other allergic condition with fever therapy. In fact, none of the cases of bronchial asthma reported here were asymptomatic when observed one year after the treatment. Owing to the fact that most workers have used far different technics with no comparative study, the optimal technic of administering therapeutic fever in allergic conditions is yet to be determined. Phillips and Shikany[9] considered a minimal course of ten treatments necessary, with fifteen treatments preferable. Feinberg, Osborne and Steinberg[1] administered a course of two intermediate fevers, sometimes repeating them in case of relapse. Phillips's results seem superior to those of the latter workers, but it must be considered that they were dealing only with intractable cases. Miller and Piness[10] obtained only temporary relief in 2 out of 7 cases, using one fever session.

None of the cases in this report received as many fever sessions as were considered desirable. Because of lack of co-operation of some of the patients, no opportunity was given to treat any subsequent light attacks or to continue therapeutic fever until the patient was in improved general health. There is reason to believe that the results would have been better if more fever sessions could have been administered. This belief is based on the fact that marked improvement was obtained in 7 of the 8 cases of asthma receiving three fevers or more, and that Cases 5 and 15, which were exceptionally severe and received the most treatment, have exhibited the most complete improvement. Both these patients had been entirely incapacitated for work for over eight months prior to fever therapy, and have been able to carry on their work for one year and two years, respectively, subsequently. This opinion as to the optimal number of fever sessions is in agreement with the conclusion of Phillips.

As to the type of fever session most efficient in the treatment of allergic disease, the most unfavorable reports seem to come from those using long, high fevers. Trautman[6] reported no improvement in 5 cases of bronchial asthma treated at 104 to 106°F. and in 2 cases of hay fever treated at 103 to 104°F. for five hours. Five treatments were given, so that the results cannot be attributed to too few fever sessions. Metz[11] obtained relief in 3 of 8 cases with a fever of 106°F. for three hours. Phillips and Shikany[9] reported in 1935: "Temperatures above 105°F. rectally have no advantage over those ranging between 102 and 105. Temperatures sustained for four hours produce results comparable to those extending over longer periods." In 1936 Phillips[4] reported that he was treating a group of patients with fever of 101 to 102°F. for forty-five minutes; he considered this technic satisfactory. Le Boutillier,[5] using fevers of not over 103°F., reports uniformly favorable results in 9 cases of bronchial asthma and 5 cases of hay fever.

It would seem rational to expect that the strain of the high fever on the asthmatic patient, already struggling for breath and debilitated by his prolonged attack, would partially counterbalance any beneficial effect that an induced fever might have on the condition.

I have tried several types of fever elevation in bronchial asthma, although in too few cases to

furnish any definite conclusions, but enough to give the impression that short elevations of temperature to 102°F. give results at least comparable with, if not superior to, those obtained with higher and longer fever sessions. In addition there are the added advantages of the reduced strain, the lessened danger and the greater economy of the lower fever. It is possible to treat many aged arteriosclerotic patients for whom higher fevers would be contraindicated. Conditions such as hay fever, urticaria and eczema, which one would be reluctant to subject to a high or intermediate fever, can be treated. The cost of fever is so reduced that the short low-fever technic can be used with patients who would be unable to afford the costly long high-fever technic.

These cases demonstrate the facts that a certain amount of lasting improvement can be obtained in many cases of allergic disease from a small number of low-fever sessions, and that this technic may be found useful where conditions make it difficult to administer what is considered to be the optimal number of fever sessions.

Summary

A total of 32 cases of allergic disease were given therapeutic fever in a humidified external-heating type of cabinet.

The results with a small number of short low-fever treatments correspond favorably with those obtained with a greater number of longer and higher fevers, in that 75 per cent of the asthma cases and 81 per cent of the hay-fever cases showed clinical improvement.

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REPORT ON MEDICAL PROGRESS

TUBERCULOSIS

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BROOKLINE, MASSACHUSETTS

IN MASSACHUSETTS in 1939 there was again a drop in the death rate from pulmonary tuberculosis. The unofficial figure for that year is 33.8 per 100,000 population, as opposed to 34.9 in 1938 and 40.0 in 1937. Figures from other states are not yet available. There is, however, an interesting report from the Metropolitan Life Insurance Company[1] showing that in its group of industrial policyholders in 1939 the tuberculosis death rate was 44.9, a 4.9 per cent decline for the year. This rate was a little more than half that recorded in 1929 and one fifth that of the company's first report in 1911.

Control Program

The years are bringing changes in the methods for hastening the decline in the morbidity and mortality of pulmonary tuberculosis. At one time it was believed that pulmonary tuberculosis was always contracted in childhood, and that it was such childhood lesions that flared into activity later in life. Efforts were therefore directed principally toward finding infected children and treating them in outdoor schools and preventoriums in the hope that their lesions could be so securely healed that they would never again become active. We have learned much from studying large groups of school children, and thousands of people have been taught the principles of hygiene in summer camps and preventoriums. With the decline in the incidence of tuberculosis, however, so few cases of active disease are now found in a wholesale study of young school children that the results in many sections of the country do not justify the expense. A survey by Remick and Chadwick[2] in Middlesex County disclosed that in 1938-1939 it cost $3500 to discover each case of active disease in the school clinics. These clinics have therefore been discontinued and more attention is being paid to the study of contacts of sanatorium pa-

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tients. In 1939 it was possible to x-ray 74 per cent of the known close contacts of patients admitted to the sanatorium. Of these 1.6 per cent over seventeen years of age showed active pulmonary tuberculosis.

The nationwide program also provides for more sanatorium beds so that the patients with positive sputum who are spreading the disease may be isolated and receive any form of compression treatment that is indicated. By converting the sputum from positive to negative, compression therapy not only benefits the individual but also constitutes a vital factor in public health.[3]

Tuberculin Patch Test

Tuberculin testing has played an important part in all public-health studies and in the past year a new method has been proved of value. This latest test is known as the "patch test" and was first described by Vollmer and Goldberger[4] in 1937. The material used is a strip of adhesive tape on which have been placed two small squares of filter paper saturated with O.T. (Old Tuberculin), with a control square saturated with glycerin broth placed between them. The skin of the forearm, sternal area or back is cleansed with ether, benzol or acetone and the tape applied. The natural moisture of the skin liquefies the tuberculin, which is then absorbed. The patch remains in place for forty-eight hours, and the test is read forty-eight hours after its removal. If follicles or papules on an erythematous indurated base appear, the reaction is positive. The method is therefore simple, and avoids the necessity of using a scarifier or syringe and of preparing the tuberculin dilutions.

There are now more than ten articles in which results with the patch and intradermal tests have been compared.[6–7] Vollmer[8] reports that to date both methods have been used in 6104 cases. Of these, 1819 were positive to the patch test and 1833 to the intradermal. There was 100 per cent agreement between the number of positive reactors to both tests when 0.1 cc. of a 1:1000 dilution of O.T. or the first-strength P.P.D. (Purified Protein Derivative) was used for the intradermal test. In the few cases that were positive to the intradermal and negative to the patch test 0.1 cc. of a 1:100 dilution of O.T. or the second-strength P.P.D. had been used. In cases of known active pulmonary tuberculosis where the patch test was negative, the intradermal was also. These are almost always cases of overwhelming miliary tuberculosis. Only one group of investigators[9] reports a real discrepancy between the two methods.

It seems clear, therefore, that the routine use of the tuberculin patch test will reveal almost every case of active tuberculous infection, and it is particularly useful when large groups are to be tested and some parents object to the employment of a syringe. The method lends itself also to office procedure, but the practitioner must keep in mind the fact that, if the patch test is negative and all possibility of tuberculous infection is to be ruled out, an intradermal test with a 1:100 dilution of O.T. or second-strength P.P.D. should be made.

Minor objections to the patch test have been raised. Some people dislike wearing adhesive tape for two days: some complain of itching, and others are actually sensitive to the adhesive itself. Excessive perspiration may loosen the tape and therefore spoil the test, and bathing of the part to which the adhesive has been applied must be avoided for the forty-eight-hour period.

Negative Tuberculin Test with Calcified Lesions

In discussing the value of the tuberculin test in general, an important point to remember is that as a tuberculous lesion heals the tuberculin test may become negative. In a recent article Long[10] writes authoritatively:

> A more important reason for the failure of the tuberculin test to detect all tuberculosis is the waning and disappearance of allergy that occur with healing. In this country of dropping tuberculosis morbidity and increasing isolation of patients with open tuberculosis this is probably a phenomenon of increasing frequency. It is apparently true that unless allergy is stimulated from time to time by reinfection, in cases of progressive healing of an existing infection, the intensity of response will diminish. In a large experience, of which a preliminary report is here given, 11 per cent of 2490 patients passed in the period of a decade from the tuberculin-positive to the tuberculin-negative state. The tendency to become negative was directly and closely correlated with the intensity of the original reaction and the degree of continuing exposure. In this large series of cases there were no instances in which the reaction became negative in frank cases of reinfection-type pulmonary tuberculosis, but there were a few examples of cessation of reacting power in patients with old scarred latent apical or childhood-type tuberculosis. Conversion to the negative state was fairly frequent in cases with nodules interpreted as calcified lesions of primary tuberculosis.
>
> Two cases are recorded in which tuberculin-negative children with calcified lesions became tuberculin-positive coincidentally with the development of fresh, active tuberculosis.

Age Factor in Prognosis

One of the most difficult problems in treating tuberculosis is to determine the prognosis of the individual case. As study of the disease has progressed it has become increasingly evident that age is one of the vital factors in prognosis, and

several articles bearing on this subject have appeared during the past year.

Infantile Tuberculosis

Smith and De Lacey[11] report a study of cases of infantile tuberculosis observed in the Infants' and Children's hospitals in Boston. They summarize their findings as follows:

> Since the great majority of deaths from tuberculosis during infancy occur in the first two years of life, the attention of pediatricians must be centered on infancy as the most important age period for further lowering the mortality from this disease. A study of the outcome of tuberculosis in 339 infants over a period of fifteen years has demonstrated a 56 per cent mortality for the group during the first admission to the hospital. Of the 116 remaining patients whose course is known since discharge to other institutions or to their homes, more than half have survived for one to fifteen years after the original diagnosis was made. In all but 1 of those who succumbed to their disease this event occurred within twelve months; 1 infant died after eighteen months. Five later developed a skeletal or glandular tuberculosis, and 1 an adult type of pulmonary tuberculosis. . . . The mortality varies directly in proportion to the degree of disease evident at discovery.
>
> Attention is called to the acute nature of infantile tuberculosis, and to the attendant improvement in prognosis once the infant has survived the critical year after discovery.

Pulmonary Tuberculosis in Adolescents

The high mortality in the group of patients who have developed pulmonary tuberculosis of the reinfection type in the second decade and have not had early treatment has long been known. It was pointed out clearly by Morgan[12] that even prolonged bedrest did not prevent progression of the disease. The next therapeutic measure tried was artificial pneumothorax, and the first reports of cases that have received this treatment are now appearing. Articles appeared by Chadwick, — and Evarts[13], — who initiated the Massachusetts Ten-Year Program, and by Zacks,[14, 15] who worked with him at that time and has since carried on the study. Unfortunately it is too soon to give statistical proof of the value of artificial pneumothorax in this age group, but the present trend is toward its early institution.

Zacks reports on pulmonary tuberculosis in the second decade of life. He concludes:

> 1. Bed-rest alone in a sanatorium does not modify the course of spreading tuberculous lesions to an appreciable degree and does not reduce the mortality of these lesions.
>
> 2. Therapy, either bed-rest alone or bed-rest with pneumothorax, has not affected to any appreciable degree the mortality in advanced bilateral lesions, or lesions of minimal extent that are allowed to progress too far without early attack by collapse therapy. Collapse therapy in advanced unilateral lesions tends at least to prolong life, and it may be demonstrated by further observation that it also reduces the mortality.
>
> 3. Some evidence has been presented which would seem to indicate that an early attack by collapse therapy may reduce the fatality rate of early asymptomatic lesions that show a tendency to spread. A final answer on this point cannot be given without at least five more years of observation.
>
> 4. In the second decade of life, the prognosis for soft early lesions is uncertain for at least ten years. In individual cases, most important in prognosis is the behavior of the lesion according to serial x-ray films. Lesions that progress ultimately do poorly: those that retrogress on the whole do well.
>
> 5. Retrogressive lesions should be observed by serial films until definite stabilization is evident either by calcification or strand-like fibrosis or both.

The "evidence" referred to under Paragraph 3 is that in 55 boys who had sanatorium care only and were observed for about five years there was a mortality rate of 31 per cent, while in 59 boys who had sanatorium care plus artificial pneumothorax the rate was only 9 per cent. In 131 girls receiving sanatorium care alone the mortality rate was 34 per cent, and in 108 girls with sanatorium care plus pneumothorax the rate was 23 per cent.

Chadwick and Evarts,[13] reporting from the Middlesex County Sanatorium, reached similar conclusions. Their total group consisted of 245 cases observed for five to ten years. Fifty per cent of the patients were given artificial pneumothorax or other collapse therapy. During the period of observation the death rate for the boys was 5 per cent, and for the girls 28. The authors do not attempt to give comparative statistics for patients having sanatorium care and those having sanatorium care plus artificial pneumothorax, but from their experience they conclude, "The evidence available in this and other studies indicates the ineffectiveness of bed rest treatment alone in staying the progress of tuberculosis in adolescents." They also state, "Pneumothorax should be instituted as soon as possible after diagnosis is made even in the minimal cases."

Primary Tuberculosis in Adults

At one time much stress was laid on the "childhood type of infection," and it was assumed that this benign primary complex occurred only in childhood. As tuberculin and x-ray studies have been made on older groups, attention has been drawn to the primary infections that develop after childhood, particularly in nurses and medical students with negative tuberculin tests at the beginning of their professional training but positive tests and x-ray lesions after known exposure. This primary infection has been assumed to run the same benign course regardless of the age at which it occurred, and the suggestion was made that the term "childhood type" be replaced by "first-infection type."

In this country Myers[16] in particular has been in-

terested in first infections, and has asserted repeatedly that "the primary complex as it develops in the body of an adult is a benign disease and apparently is of no more clinical significance than the primary complex which develops in the body of a child." In substantiation of this statement he and his associates report a group of 557 nurses and medical students who became reactors to tuberculin while under observation, none of whom developed active pulmonary tuberculosis.

Myers's contention has been challenged by a number of authorities in this country and abroad. In a letter to the *Journal of the American Medical Association,* Malmros,[17] of Sweden, has recently objected to it. He agrees that in the great majority of cases the lesions are asymptomatic and do not progress to manifest disease, but he maintains that "in a considerable number of cases the initial apical lesions were the first manifestation of a progressive type of pulmonary tuberculosis" and that it is not safe to consider the infection benign just because it is primary.

Malmros's observation was borne out by Badger and Spink's[18] study at the Boston City Hospital, in which they noted 7 cases of primary infection with x-ray lesions occurring among student nurses. Of these cases 3 never developed symptoms, 2 became arrested with sanatorium care and 2 progressed in spite of sanatorium treatment.

It seems evident, therefore, that one must not be too much influenced in prognosis by whether the infection is primary or secondary, but must take all the other factors into consideration in planning treatment.

One of the difficulties in this whole problem has seemed to me to be that writers have spoken of the primary infection as if it were a single infection occurring in a non-sensitized individual. They have not considered the facts that in almost every case there must be repeated exposure and that since sensitization develops within three weeks from the first exposure many of the infections must be on a sensitization basis and, therefore, of the reinfection type. The size and frequency of the dose of tubercle bacilli and the interval between exposures must necessarily play important parts in determining the nature of the lesion.

Chemotherapy

Some years ago Wells and Long[19] pointed out the theoretical difficulties involved in the chemotherapy of pulmonary tuberculosis in human beings. It is necessary to find a chemical that will not only kill tubercle bacilli in vitro but will also prove itself capable of penetrating an avascular tubercle, enter the phagocytic cells within the tubercle and kill the "wax-armored tubercle bacilli" in the phagocytic cells. This is a great deal to expect, and laboratory research has shown that sulfanilamide and sulfapyridine do not meet the requirements. If the development of a tuberculous lesion is to be inhibited in laboratory animals, these drugs have to be given in seven times the usual clinical dose, and treatment must be started a number of days before the animal is experimentally infected with tubercle bacilli. Even then the development of the tuberculous process is only retarded and not prevented. It is not surprising, therefore, to find little encouragement from the few reports that have been made on the use of these chemicals in patients with pulmonary tuberculosis.

Nayer and Steinbach[20] report on 8 patients with extensive bilateral pulmonary tuberculosis who were given sulfanilamide from ten to seventy-one days with no apparent effect on the disease. Freilich, Coe and Wien[21] treated 35 patients with moderately or far-advanced tuberculosis over a period of ten to fifteen weeks with sulfanilamide. The drug was given by mouth in 10-gr. doses three times a day, and was gradually increased to 20 gr. three times a day over a period of one month and kept at this level for the following six to ten weeks. The authors concluded that sulfanilamide was of no apparent value in altering the course of patients with pulmonary tuberculosis.

Faniel et al.[22] gave sulfanilamide to several patients, but reported that the treatment resulted in no appreciable modification of symptoms. They believe that the drug may act favorably on associated organisms without affecting the tubercle bacillus.

Allison and Myers[23] treated with sulfapyridine 7 patients having active pulmonary tuberculosis and 1 with acute generalized miliary tuberculosis. The patients were given the drug for a relatively short time, and no evidence was obtained that sulfapyridine influenced the course of the disease.

This group of over 50 cases is too small to justify final conclusions, but present evidence does not warrant the use of sulfanilamide and sulfapyridine in the treatment of pulmonary tuberculosis unless there is a definite secondary infection with organisms that are susceptible to the drugs.

Prognosis of Pleurisy with Effusion

Primary pleurisy with effusion has long been considered tuberculous unless otherwise proved, and figures reported early in the century are quoted to show that about 40 per cent of these cases later developed active pulmonary tuberculosis. These figures, however, are based on cases studied before x-rays had come into use, and it

is probable that a large proportion of them were not really primary pleurisy but pleurisy secondary to pulmonary tuberculosis, which a roentgenogram would have proved. With present x-ray facilities it is possible to determine with a high degree of accuracy whether pulmonary infection is present at the time the pleurisy develops, and only those cases with negative lung fields are now classed as primary pleurisy with effusion.

Study of the pleural fluid does not prove that all these cases are tuberculous, since the number of tubercle bacilli in the effusion may be very small. Guinea-pig inoculation has been positive in from 23 to 55 per cent of the cases in the various series reported. A recent survey of 58 cases studied at the Massachusetts General Hospital from 1916 through 1938 with no evidence of pulmonary lesions gave only 14 per cent positive findings on guinea-pig inoculation. This is a surprisingly low figure, but does not disprove a tuberculous etiology.

Trudeau[24] has recently reported a follow-up study of 54 cases of primary pleurisy with effusion that were followed from three to twenty-five years. Of this group only 4 patients developed evidence of pulmonary tuberculosis, and in 1 of these the lesion was doubtful. Trudeau concludes, "The prognosis of pleurisy with effusion with either negative, doubtful or extremely slight apical pulmonary findings by X-ray is excellent in patients receiving at least four months of sanatorium care; in fact, it is practically as good as the normal adult population in the same age group." This is an important factor in prognosis, but one must remember that all these cases had at least four months of rest treatment.

Etiology of Spontaneous Pneumothorax

In the past, spontaneous pneumothorax, like pleurisy with effusion, has been considered tuberculous. Studies published during the last ten years, however, have all pointed to the nontuberculous etiology of this condition when it develops in a previously healthy person. The subject has been carefully summarized by Perry,[25] who shows that of the 250 published cases only 2 per cent of the patients later developed tuberculosis. He describes the currently accepted explanation of this condition as the rupture of an emphysematous bleb. This bleb forms as a result of congenital defect, fibrous valvular obliteration of the smaller bronchi or localized emphysema. Thoracoscopic examination will often reveal the lesion on the surface of the lung. Perry concludes: "Rest in bed for one week should be sufficient to allow the perforation to heal. . . . Sanatorium treatment is quite unnecessary." In his series the pneumothorax recurred in 4.4 per cent of cases; other authors report recurrences in as high as 20 per cent.

Ylvisaker, Kiessling and Kirkland[26] report 17 cases of spontaneous pneumothorax among employees of a large business organization. In none of these could tuberculosis be proved, and of 13 cases tested with tuberculin 5 were negative.

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CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

ANTEMORTEM AND POSTMORTEM RECORDS AS USED IN WEEKLY CLINICOPATHOLOGICAL EXERCISES

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

CASE 26201

PRESENTATION OF CASE

A sixty-six-year-old white woman was admitted to the hospital complaining of indigestion for a period of twelve years.

About twelve years before admission, following the death of her husband, the patient began having vague digestive symptoms characterized by anorexia, abdominal distention and "gas." These complaints persisted until about five years before entry when they became worse. X-ray studies at that time revealed a "high cecum, irritable colon and gallstones." Her stools became rather "shredded" in appearance and light in color, but she was otherwise well and lost no weight until one and a half years before admission, when she developed a vague dragging distress localized in the right lower quadrant of the abdomen and aggravated by the upright position. She also noticed that the ingestion of "rough" food increased these symptoms, and that gas seemed to be constantly moving around in the bowels. At that time roentgenograms of the abdomen showed "old tuberculous disease of the cecum." She was placed on a low-roughage, low-residue diet, and the symptoms improved but did not abate entirely. She then developed a severe case of "shingles" over the right thorax, with fever and a weight loss of a few pounds, from which she recovered uneventfully. About six months before entry the patient felt weak and her blood was found to be "low"; vitamin B complex with iron (Elixir Feosol) was prescribed. The blood did not respond to treatment, and she continued to feel weak. She became anorexic and lost weight, and developed pain in the right lower quadrant.

X-ray studies of the chest in an outside hospital showed "no parenchymal tuberculous infiltrative change." A gastrointestinal series was negative, except that the colon was hypermobile and there was delayed emptying time in the terminal ileum, one of the folds of which lay in the right iliac fossa and was moderately dilated. The cecum remained high, as previously noted, and between the cecal end and dilated fold there was an area of narrowing. Some external pressure changes were evident against the other coils of ileum, caused by rather marked thickening of the wall of the terminal ileum or surrounding inflammatory change, possibly involving either the omentum or the surrounding lymph nodes. A barium enema was negative except for the extension of a slight amount of barium through the ileocecal valve into the narrowed terminal ileum. The colon was well emptied after evacuation. The stools remained "normal"; no constipation, melena or other symptoms were noted.

Thirty-four years before admission she had undergone an appendectomy.

Physical examination revealed a fairly well developed and nourished woman who showed evidence of recent weight loss but did not appear sick. The examination was negative except for the presence of a firm, irregular, non-tender fixed mass, measuring about 8 by 11 cm., located in the right lower quadrant of the abdomen. The blood pressure was 112 systolic, 70 diastolic.

The temperature, pulse and respirations were normal.

Examination of the blood showed a red-cell count of 3,900,000 and a white-cell count of 15,200. The serum nonprotein nitrogen, chlorides and protein were normal. An electrocardiogram was normal.

The patient was transfused, and on the eighteenth hospital day an operation was performed.

DIFFERENTIAL DIAGNOSIS

DR. GRANTLEY W. TAYLOR: Were the x-ray films taken here or outside?

DR. AUBREY O. HAMPTON: They were done outside, but we have copies. I do not agree with the interpretation. This, which was interpreted as cecum, is not the cecum. It really lies here, and most of the narrowing is in the ascending colon and cecum, both of which are diffusely involved by a similar process and are definitely shortened. It is true that the ileum is also involved and that the diameter of its lumen is reduced to almost a millimeter in the upper portion of the lesion; yet no real obstruction is present. One point in the ileum, which I should like to see much better, appears irregular, and there is a diverticulum-like pouch proximal to the constriction, as if the ileum had been working against obstruction over a long period of time.

DR. TAYLOR: You cannot say anything about the mucosal pattern from the film?

DR. HAMPTON: I think it is destroyed. The end of the defect is conical, rather than overhanging, as you might expect if that were malignant. She also had gallstones.

DR. TAYLOR: The x-ray diagnosis of tuberculous disease of the cecum was made one and a half years before admission. Are those films available?

DR. HAMPTON: No.

DR. TAYLOR: Is it reasonable to make a flat-footed diagnosis of cecal tuberculosis by x-ray?

DR. HAMPTON: There is a typical picture of ileocecal tuberculosis, but we do confuse it with ileitis.

DR. TAYLOR: We have here, not to be elaborate about it, a longstanding history of gastrointestinal disturbance, the symptomatology of which is accounted for by what was found, namely an obstructive lesion involving the ascending colon in the region of the ileocecal valve and a large fixed mass. The problem is simply to decide what that mass was.

One should consider the possibility of foreign bodies following laparotomy, but the appendectomy was done some thirty-four years before, and it seems to me that she would not have been likely to have anything starting as a sequela of that. We have seen inflammations due to perforation of the terminal bowel by foreign bodies. Tooth picks and porcupine quills will sometimes give rise to inflammatory masses in this region, but the conspicuous thing about the course is that except for the white count there was nothing to suggest an inflammatory process. In fact, we have to go at this with very little help except that there is something here by x-ray, that there is a palpable mass and that is all. The laboratory studies do not contribute very much. No blood was noted in the stool examinations. There was a slight anemia —3,900,000. There are inflammations which would not have to show acute leukocytosis, such as tuberculosis and actinomycosis, but I do not see that we have anything except previous x-ray studies which would justify us in assuming that we are dealing with tuberculosis or actinomycosis. Ileitis is not at all common in elderly people, and with a twelve-year history this patient should have had more overt manifestations of an inflammatory process, if ileitis had been present. One cannot rule it out, nor can one say that this is not tuberculosis, but both seem to me definitely unlikely. The chest plates showed no evidence of tuberculosis.

We then come to neoplasms, and against neoplasm is the long duration of the history and the relatively good state of health that she was in at the time of admission to the hospital. Carcinoma could not have endured so long. You can conceive of its developing on a pre-existing lesion, the nature of which I am unable to suggest. The same applies to lymphoblastoma. I had considered that we might be dealing in this case with a carcinoid on the ground that these tumors are essentially benign and may be present for a long time without seriously impairing the patient's general condition. However, I do not see how we can say, on the strength of the material we have here, whether we are dealing with tuberculosis or with carcinoid. I am inclined to believe we are not dealing with a malignant neoplasm or a type of inflammatory change other than tuberculosis. Ulcerative colitis is a possibility, but there is nothing in the history to suggest the diagnosis. This lesion involves the terminal ileum and a restricted, localized area in the cecum. My first diagnosis is carcinoid, and my second, tuberculosis of the cecum.

DR. CLAUDE E. WELCH: I can add but little. We were very much puzzled. As a matter of fact, we did not have Dr. Hampton's interpretation of the x-ray film, which might have somewhat changed our diagnosis. We thought we were probably dealing with a polyp of the cecum. The large size of the mass with no blood in the stools led to that diagnosis. She went through a two-stage resection without any difficulty.

CLINICAL DIAGNOSIS

Polyp of cecum.

DR. TAYLOR'S DIAGNOSIS

Carcinoid.

ANATOMICAL DIAGNOSIS

Tuberculosis of ileum, cecum and ascending colon.

PATHOLOGICAL DISCUSSION

DR. TRACY B. MALLORY: The diagnosis proved to be tuberculosis. The entire cecum and ascending colon were markedly shrunken, contracted into a few centimeters, as you see in the x-ray plate according to Dr. Hampton's interpretation. There were several ulcerations, but the major part of the process could be fairly classified as hyperplastic. We found one ulcer 7 mm. in diameter and several minute tubercles in the ileum, but the major process was in the cecum.

DR. WILLIAM B. BREED: Dr. Hampton, would you be willing to make a definite diagnosis of tuberculosis on that film?

DR. HAMPTON: Yes.

CASE 26202

PRESENTATION OF CASE

A thirty-year-old man was first seen by his physician when he complained of fatigue and of not having felt well for a couple of months. He gave a history of never having had anything to eat ex-

cept milk and dry cereals, and on rare occasions a leaf of lettuce or a banana. The cereal had to be obtained from individual boxes, and the milk from a certain dairy. He was accustomed to drinking three quarts of milk a day and said that he took this in much the same manner as he put gasoline into his automobile — in order to make it go. He was unable to eat a meal with the rest of the family because the sight and smell of other food disturbed him. His mother had found when he was a baby that she was unable to introduce beef juice into his bottle of milk, or to give him any food other than plain milk. She had consulted various physicians during his infancy and childhood with reference to his diet, but was told that he would probably outgrow his distaste for food. While he raised chickens as a livelihood he had never tasted chicken meat and, until entering the local hospital, had never tasted the juice of an orange.

While a good businessman he was eccentric as to habits, having had no association with girls or young women and very few close friends among the young men of his acquaintance.

On examination his general appearance was poor. His pasty facies suggested nephritis, but nothing else unusual was found. The systolic blood pressure was recorded as 115.

Because of his general condition he entered a local hospital. While there the nurses were unable to persuade him to take any food but milk from a particular dairy, except that on occasions he took small amounts of creamed vegetables and orange juice. He was also given brewers' yeast and Chlorosalsterol in an attempt to increase his vitamin intake.

Examination of the blood showed a red-cell count of 3,420,000 with 82 per cent hemoglobin, and a white-cell count of 14,000 with 70 per cent polymorphonuclears, 20 per cent lymphocytes, 6 per cent monocytes and 4 per cent eosinophils. The platelets were normal. There was some polychromatophilia and variation in the size and shape of the red cells. The nonprotein nitrogen was 300 mg. per 100 cc., but the technician reported the result as approximate, due to cloudiness of the solution. The blood sugar was 166 mg. per 100 cc. A renal function showed no phthalein excretion. The blood Hinton test was negative. The urine showed a specific gravity of from 1.009 to 1.004; it contained a large amount of albumin, and nothing in the sediment except an occasional hyaline cast.

X-ray examination of the stomach revealed this organ to be of normal size, outline and position, with some spasm at the pylorus. A barium enema showed a hypertonic colon, which was interpreted as being due to a simple colitis. The Graham test was negative. The kidneys were reported as normal in size, shape and position, with no evidence of urinary calculi. No evidence of abnormality of the heart or lungs was noted in x-ray films of the chest.

While in the hospital he suddenly developed complete prolapse of the rectum, which was successfully treated by painstaking care. After being in the hospital twenty-two days he was discharged home, in the care of a very competent nurse, because of more or less dissatisfaction at being away from home. There he developed a cough, which was not troublesome until the last three or four days of life, when opiates were required for its control. There was very little sputum. Another outstanding symptom was increasing difficulty in voiding urine. He required six to eight minutes to start the stream, which would then voluntarily stop, and the same process had to be repeated each time he voided. The daily fluid intake averaged 2250 cc., and the urinary output ranged from 600 to 1200 cc. The daily intake of milk varied from 360 to 720 cc., the highest being 930 cc. The milk was unpasteurized and obtained from a Guernsey herd, the cows being fed, the year round, with Eastern States balanced ration containing 20 per cent of protein, together with green pasturage in the summer and hay, ensilage and carrots during the winter. This source of supply had been used for eight years, and a similar one had been used for the twelve years previous. There was an intake of from 120 to 360 cc. of orange juice a day; one or two eggs were ingested as eggnogs, and very small quantities of cereal such as oatmeal or cream of wheat, small quantities of macaroni, lettuce, carrots, celery soup and a few crackers were included in the daily menu. He was also given 30 to 90 cc. of olive oil, yeast tablets, Digalin for his heart, and Sodium Amytal as a base sedative for restlessness. The cough was aided in the beginning by syrup of hydriodic acid, but later on required codein.

Physical examination on the day before death showed a well-developed and well-nourished man lying in bed. He was oriented and talked freely. His appearance was that of a patient with chronic nephritis, owing to pastiness of the face and puffiness about the eyes. The pupils were normal, the sclerae were pale, and the fundi showed nothing except pallor. The breath was normal, and he was breathing quietly. The tongue was coated; the teeth were in good condition; the mucous membranes were pale. He had small

buried tonsils. There were no enlarged lymph nodes. The chest was symmetrical and moved normally on respiration, the only abnormal finding being slight dullness at the right base, with moist rales. The apex of the heart was not palpable, but the left border of dullness was made out just outside the nipple line. The rhythm was regular, the rate 140. The sounds were of poor quality. Gallop rhythm was present. The blood pressure was 135 systolic, 65 diastolic. There was no evidence of sclerosis of the peripheral arteries. The abdomen was moderately distended, and because of this and the thickness of the abdominal wall, palpitation was unsatisfactory; however, there were no apparent masses or palpable viscera. The penis and both testicles were distinctly small in size. The knee jerks were normal, and there was no edema of the legs or feet.

The urine specimen obtained at the completion of the physical examination was less than 30 cc. in volume; it was cloudy, contained a large amount of albumin and showed a negative sediment. The blood smear showed the following differential: polymorphonuclears 89 per cent, lymphocytes 6 per cent, basophils 1 per cent and large monocytes 4 per cent. The red cells showed some variation in size; there was surprisingly little achromia. The platelets appeared normal.

Because of the serious state of the patient and the difficulty in feeding, the suggestion was made that the patient be transferred back to the hospital for tube feedings of a solution of milk, cream, sugar, eggs and orange juice sufficient to make up about 2500 calories. He was transferred to the hospital on the following day, but while preparations were being made for treatment the patient suddenly developed what appeared to be a severe attack of pulmonary edema, and died about an hour thereafter.

Differential Diagnosis

Dr. Richard J. Clark: We are faced at the onset with the picture of a "peculiar individual," showing many of the earmarks of a psychopathic personality. For thirty years he had lived on three quarts of milk a day plus some dry cereals. Our immediate thought is that he may have been suffering from a deficiency disease. However, if he had taken three quarts of raw milk a day, he should have received adequate amounts of vitamins, protein and minerals with the exception of iron. He did lack the normal amount of intestinal bulk and roughage.

His primary complaint was one of fatigue, with no localizing systemic complaints. The physical examination was negative except for a nephritic facies.

The laboratory findings are somewhat surprising. He had a quite normal hemoglobin — 82 per cent. The one recorded red-cell count was 3,420,000, indicating a rather high color index. The differential and smear were not suggestive of pernicious anemia. The nonprotein nitrogen of 300 mg. per 100 cc. was strikingly high. Renal function by phthalein excretion was nil. The urine showed a fixed low specific gravity, with a large amount of albumin. The sediment was surprisingly negative. I presume that the blood-sugar level reported at 166 mg. per 100 cc. was determined in a fasting specimen; it is somewhat high, although no glycosuria was noted. X-ray films of the kidneys showed normal size, shape and position. The gastrointestinal and chest films were essentially negative.

At the time of his first hospital discharge we are left only with quite definite clinical evidence of renal failure and laboratory evidence of uremia. There are several surprising factors in the situation. With a nonprotein nitrogen of 300 mg., a phthalein excretion of zero and a fixed specific gravity, an elevated blood pressure is certainly to be expected with any ordinary type of nephritis. Also, more in the way of casts and cells in the sediment might be expected. It would be helpful to know something about the serum protein and sodium chloride, but this information is not given. There is no evidence for any specific type of pre-renal azotemia. The normal appearing kidneys by x-ray tend to rule out congenital cystic kidneys, hydronephrosis and the like, as does the rather negative sediment. There is no past history given to indicate the onset of any acute nephritis. At the moment I am left with a diagnosis of renal failure, type uncertain.

After his return home he developed trouble in voiding urine. There is no report of a rectal examination, and we know nothing about the prostate. In view of a urine sediment later that was still negative, it seems most unlikely that there was any growth or other factor causing an organic urinary obstruction. From the evidence at hand there is no proof of a cord lesion to account for this. I can only attribute this symptom to his state of general weakness.

It is stated that he also developed a cough. In view of subsequent events I should judge that this was coming from an early pulmonary congestion due to circulatory failure. A recent chest plate was negative, and we are not told that he had fever.

At the time of the examination on the day before death, he still showed a nephritic facies, but surprisingly we are told that he was well-nourished. The fundi were negative. He apparently did not

have a uremic odor to his breath. He had some congestion at the right lung base. The heart showed some signs of weakening, with slight enlargement to the left and a rapid rate with sounds of poor quality and gallop rhythm. The blood pressure was relatively normal. There was no arteriosclerosis. The genitalia were small, being one bit of evidence for a possible endocrine dyscrasia, but there was nothing else to tie up with this. There was a large amount of albumin in the urine, the specific gravity is not given, and the sediment was negative.

The following day the patient developed acute pulmonary edema and died of what would seem to be acute congestive heart failure. Over the course of observation he had shown evidence of progressive myocardial weakness. There is no evidence for rheumatic, congenital or hypertensive heart disease. There is no arteriosclerosis or evidence for coronary disease. Hence, the heart failure must have been myocardial. With a state of relative malnutrition, did he have a beri-beri heart? On his original three quarts of milk a day, he should have had an adequate intake of vitamin B. Later, after discharge from the hospital, 360 to 720 cc. of milk would not give an adequate intake, but when supplemented by yeast, — we are not told how much, — it would seem probable that the vitamin B intake was sufficient to prevent beriberi. I can make no definite cardiac diagnosis, but believe that an enlarged heart will be found, with myocardial degeneration, and consequent pulmonary congestion.

I believe that the postmortem will show a chronic renal lesion which was most likely the primary cause of his death. It will probably be of the chronic glomerular type, but I am disturbed by the lack of hypertension and other vascular changes. The peculiarities of diet, with possible iron lack at first and more general deficiency later, probably contributed to his general weakness, but I suspect they were not the primary cause of his final illness.

There is very likely an unseen "catch" in this case to explain the low blood pressure and, possibly, the cause of the pre-renal azotemia. The postmortem findings should be most interesting.

Clinical Diagnoses

Food phobia.
Chronic nephritis?

Dr. Clark's Diagnoses

Psychopathic personality.
Chronic glomerular nephritis.
Uremia.
Myocardial hypertrophy and degeneration (beriberi heart?).
Pulmonary congestion.
Inanition from dietary inadequacy.

Anatomic Diagnoses

Chronic glomerular nephritis.
Acute pulmonary edema.
Parathyroid hyperplasia, secondary.
Cardiac hypertrophy, slight.
Edema, slight, generalized.

Pathological Discussion

Dr. Tracy B. Mallory: This is the type of case in which the differential diagnosis must be begun all over again when the facts of the postmortem examination become available. The latter are easily stated. The kidneys were extremely small, with a combined weight of only 75 gm., and the right kidney was twice the size of the left. Neither the pelves nor the ureters were dilated or showed any evidences of infection, and the prostate was normal in size. The heart was slightly hypertrophied, weighing 375 gm., and there was minimal atheroma of the coronary arteries. The lungs showed massive pulmonary edema. The liver was somewhat inexplicably large, weighing 2360 gm. and showing neither passive congestion nor fatty infiltration. Next to the kidneys the most striking organs in the body were the parathyroid glands, all four of which were markedly enlarged and which together weighed 860 mg. Microscopic examination of the parathyroid glands showed marked hyperplasia of the so-called "secondary type," which is characteristically found in patients with very long-standing renal insufficiency. One could wish that certain other laboratory examinations had been performed, but we can predict confidently that the serum calcium would have been found somewhat low, the serum phosphorus considerably elevated and in all probability the serum phosphatase also increased. Microscopic examination of sections from the bones shows slight but definite evidence of parathyroid activity, with both bone destruction and bone formation increased in amount and a few minute areas of fibrous replacement of the marrow. The process, however, was probably not extensive enough to have been visualized by x-ray examination. I know of no way in which to recognize a beri-beri heart post mortem. So I must leave that question unsettled. I can only say that there was no morphological evidence of myocardial edema.

The crux of the diagnosis rests in the attempt to identify the underlying renal pathology. A

few years ago the lesions in the kidneys would almost unquestionably have been diagnosed without much hesitation as being due to chronic glomerular nephritis. In the interval Longcope and Winkenwerder[1] and Weiss and Parker[2] have called our attention to the frequency of healed pyelonephritis. Longcope particularly emphasized the frequency with which it was responsible for very prolonged renal insufficiency and noticed that certain of the cases never developed hypertension. Parker and Weiss, in contrast, have emphasized the role of chronic pyelonephritis in producing a clinical picture indistinguishable from that of malignant hypertension. The latter authors have described in detail the criteria for the histologic recognition of this lesion. Factors such as a deformity of the pelvis, inflammatory infiltration beneath the pelvic epithelium, marked inflammatory infiltration throughout the renal parenchyma, focal wedge-shaped areas of scarring, disproportionate destruction of tubules as compared with that of glomeruli, periglomerular fibrosis and the formation within the tubules of a peculiar type of dense hyaline casts suggesting the colloid of the thyroid gland are all points in favor of a chronic pyelonephritis. I have tried hard to fit this case into that category, since its clinical course is so atypical for that of a glomerular nephritis. However, I do not seem to be able to do so. The difference in size of the two kidneys and a very diffuse inflammatory infiltration throughout the parenchyma seem to be points suggestive of a pyelonephritis. In contrast, however, there was no pelvic deformity on either side, and no inflammatory infiltration immediately beneath the pelvic epithelium. The glomeruli seemed to be more extensively involved than were the tubules, and although many casts were present, only a few of them were convincingly of the colloid type. The glomeruli themselves, moreover, although free from active inflammatory changes, showed unusual numbers of capsular adhesions, and even in the best-preserved areas some degree of fibrosis was present in almost every glomerular tuft. I feel forced, therefore, to make a diagnosis of chronic glomerular nephritis rather than one of pyelonephritis, despite the very unusual clinical course. It is interesting, in view of the absence of hypertension, that the arteries and arterioles within the kidneys showed only slight intimal fibrosis and no necrotizing arteriolitis.

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LAST CALL

The annual meeting of the Massachusetts Medical Society on Tuesday and Wednesday, May 21 and 22, deserves a record attendance because of the comprehensiveness and the excellent co-ordination of the program. The latest views on a larger number of medical subjects will be presented by specialists in each field. Because of careful planning this will be accomplished in two days. There is no competition in subjects, except at the round-table meetings and luncheons, owing to the abandonment of the scheme of presentation of papers by sections.

The notable list of guest speakers appearing on the program offers a unique opportunity of hearing authoritative opinions on certain new developments and controversial questions. Surgeon-General Thomas Parran will discuss syphilis; Dr. Perrin H. Long, sulfanilamide and allied compounds; Dr. Francis G. Blake, pneumonia; and Dr. Reed Nesbit, the various methods of treating prostatic obstruction. Dr. Esmond R. Long and Dr. Edith Lincoln will describe the present views on the pathogenesis and management of adult and childhood tuberculosis. Dr. Wilson G. Smillie, a former member of the Society, will consider various aspects of the common cold. Equally qualified men in their fields who are members of the Society will discuss many other important topics, such as breast tumors, pulmonary infections, toxic manifestations of important drugs, urinary-tract infections, streptococcal infections of the respiratory tract, gonorrheal arthritis, syphilis in many of its manifestations and so forth. In addition there are many interesting and instructive scientific and commercial exhibits.

It is unquestionably true that one will be well repaid for spending these two days at the Copley-Plaza Hotel.

THE BOSTON MEDICAL LIBRARY: A COMMUNITY INTEREST

The annual report of the librarian of the Boston Medical Library for 1939, appearing in this issue of the *Journal*, again calls attention to the usefulness of this old institution in the community. Ten thousand persons used the library in the course of the year, an unusually large number when one thinks of the specialized nature of the collection and the other opportunities to read and look up references in the medical literature. Although many hospitals and the medical schools in Boston and its vicinity have working libraries, it would seem that the demand for a large, central library, with resources greater than those of other groups, is ever-present. That this demand is met by the Boston Medical Library appears clear from the report.

The ten thousand persons using the library in a year consisted of members, visiting scholars, students from many schools and the public. The library must, by reason of the article of its incorporation and because of its obligations to other institutions, be open to the public, although no

support, other than tax-exemption, is obtained from public funds. To the layman, therefore, the library is a source of medical information. With the widening interest of the public in medical matters, the importance of this provision becomes more and more evident; and although the collection is designed primarily for doctors and medical students, the use of it by the public is wisely not discouraged.

The library, moreover, maintains a large file of current medical periodicals, many of which are not available elsewhere in Boston; an unusual number of bound magazines, going back to the earliest days of medical literature; the current textbooks and monographs; an unrivaled collection of incunabula; and thousands of medical dissertations, general historical material and Americana. Built up through years of selective acquisition, no library in the country holds a finer or more useful collection based on the needs of the community that it serves.

That the purposes and aims of the Boston Medical Library are recognized is well attested by the growing membership and the increased use of the material on its shelves. The library thus maintains its position, as it has in the past, as an integral part of the cultural and scientific life of Boston in the fields of medical research and of the advancement of medical knowledge.

MEDICAL EPONYM

Broca's Area

At the fortieth session of the Société d'anthropologie de Paris, April 18, 1861, Paul Broca (1824–1880), assistant professor of the Paris Faculty of Medicine, made a communication, a summary of which was published in the *Bulletin de la Société d'anthropologie de Paris* (**2:** 235–238, 1861), under the following title: "Perte de la parole, remollissement chronique et destruction partielle du lobe antérieur gauche du cerveau [Loss of speech: chronic softening and partial destruction of the left anterior lobe of the brain]." A portion of the translation follows:

> M. Broca, at this session, demonstrated the brain of a man fifty-one years of age who had died on his service at the hospital at Bicêtre and who, for twenty-one years, had lost the power of speech. . . . The patient died April 17, 1861. At the autopsy, the dura mater was found to be thickened. . . . The frontal lobe of the left hemisphere was softened throughout the greater part of its extent. . . . The softening had extended posteriorly as far as the ascending convolution of the parietal lobe and downward as far as the marginal convolution of the temporosphenoidal lobe . . . but it was obvious at first sight that the principal seat and origin of the softening had been the medial part of the frontal lobe of the left hemisphere. . . . It seems reasonable . . . to believe that in this actual case the lesion of the frontal lobe was the cause of the loss of speech.

R. W. B.

MASSACHUSETTS MEDICAL SOCIETY

SECTION OF OBSTETRICS AND GYNECOLOGY*

Raymond S. Titus, M.D., *Secretary*
330 Dartmouth Street
Boston

Pyelitis of Pregnancy

Mrs. M. E., a thirty-year-old para III, was admitted to the hospital on September 3, 1930, in the fifth month of her pregnancy, complaining of right-sided pain, fever, general malaise, dysuria and nocturia.

The family history was essentially negative. The patient's history included three tonsillectomies, frequent cervical adenopathy and several previous cystoscopies. She had had a history of chronic pyelitis for three years. The two previous pregnancies had been normal. Catamenia began at thirteen, were regular with a twenty-eight-day cycle and lasted five days. The last period was April 14, making the expected date of confinement January 21, 1931.

Physical examination showed a well-developed and well-nourished woman. The heart was not enlarged; there were no murmurs. The lungs were clear and resonant; there were no rales. There was definite tenderness over the right kidney. The uterus was enlarged consistent with the period of amenorrhea. Examination of the urine showed large numbers of white blood cells in clumps, no red blood cells and no casts. A culture showed *Bacillus coli*. The temperature varied from normal to 103°F. for the first three days, then remained normal.

The treatment was at first supportive and symptomatic, oral urinary antiseptics being given. Then,

*A series of selected case histories by members of the section will be published weekly. Comments and questions by subscribers are solicited and will be discussed by members of the section.

on September 5, two days after admission, a cystoscopy was performed and the right infected renal pelvis was irrigated with boric acid solution, followed by the instillation of 10 cc. of 2 per cent Mercurochrome. The ureteral catheter was left in place for twenty-four hours. On September 10 another cystoscopy was done, this time with lavage of the left renal pelvis, followed by the instillation of 12 cc. of 2 per cent mercurochrome. The acute symptoms had subsided by September 13, and the patient was discharged.

On September 24, the patient was readmitted to the hospital complaining of right-sided pain. There was no fever or other symptoms. The urinary findings were the same. A cystoscopy was done on September 27, and the right renal pelvis was irrigated with boric acid solution and 10 cc. of 2 per cent Mercurochrome was instilled. She was discharged September 28.

The patient was followed in the office throughout the remainder of her pregnancy, which passed without recurrence of the pyelitis. She was admitted to the hospital in labor on January 22, 1931, and delivered uneventfully. The urine still showed many white blood cells in clumps, but the temperature remained normal throughout her hospital stay. She was discharged on the seventeenth postpartum day.

Comment. This case illustrates the more modern treatment of pyelitis. For many years the treatment was entirely constitutional and supportive, abetted by urinary disinfectants. Catheterizing ureters, culturing the urine and washing out the pelves of the kidneys illustrate a recent phase in the intelligent treatment of pyelitis. The culture in this case showed *B. coli.* Many cases that have been subjected to ureteral catheterization and renal lavage have shown marked improvement. Some of these cases, however, go on to definite kidney damage — either an abscessed kidney requiring nephrotomy or a true surgical kidney requiring nephrectomy. The subsequent history of this patient is unknown, but the washing out of the renal pelves was apparently curative.

ROUND-TABLE MEETINGS AND LUNCHEONS

The following are the completed programs of four of the round-table meetings and luncheons to be held from noon until 2:00 p.m. on Tuesday, May 21, at the annual meeting of the Massachusetts Medical Society. The program of the fifth meeting — that of the Section of Obstetrics and Gynecology — was published in the May 9 issue of the *Journal.*

Section of Dermatology and Syphilology

STATE SALON, COPLEY-PLAZA HOTEL

Chairman: Dr. C. G. Lane, Boston.
Secretary: Dr. J. G. Downing, Boston.

Subject: *Manifestations of Skin Disease on Extremities.*

Diseases Usually Localized to the Hands. Dr. C. G. Lane, Boston.

Diseases Usually Localized to the Feet. Dr. W. P. Boardman, Boston.

Diseases Localized to the Lower Legs. Dr. J. G. Downing, Boston.

Diseases with Manifestations on Extremities as Part of the General Picture. Dr. G. M. Crawford, Boston.

Fungous Diseases of the Extremities. Dr. J. H. Swartz, Boston.

A Study of the Hydrogen Ion Concentration of the Skin of the Hands and Arms. I. H. Blank, Boston.

Surgical Considerations of Dermatoses of the Hands. Dr. T. W. Harmer, Boston.

Section of Medicine

PRESIDENT'S ROOM, UNIVERSITY CLUB

Chairman: Dr. C. M. Jones, Boston.
Secretary: Dr. E. C. Miller, Worcester.

Subject: *Toxic Manifestations of Important Drugs.* Speakers: Drs. Samuel A. Levine, C. S. Keefer, C. L. Short, Alexander Marble and C. M. Jones, Boston. Followed by a general discussion.

Section of Pediatrics

BALLROOM, WESTMINSTER HOTEL

Chairman: Dr. C. F. McKhann, Boston.
Secretary: Dr. J. M. Baty, Boston.

Subject: *Allergy in Childhood.* Speakers: Drs. L. W. Hill, H. N. Pratt and E. A. Brown, Boston.

Section of Surgery

CRYSTAL ROOM, WESTMINSTER HOTEL

Chairman: Dr. R. H. Smithwick, Boston.
Secretary: Dr. B. C. Wheeler, Worcester.

Subject: *Vitamins and Surgery.* Speakers: Drs. Cornelius P. Rhoads, New York City, and C. C. Lund and A. W. Allen, Boston. Followed by a general discussion.

All those who are planning to attend the round-table luncheons and meetings should get their tickets at the Registration Desk as early as possible on Tuesday morning in order that proper accommodations can be provided. Tickets for all luncheons are $1.00.

THE SCHOOL CHILD*

When a child begins to go to school he enters on a phase of his life quite different in many respects from the years which have gone before. Until this time his activities have been associated almost entirely with the home, and through the home have come the influences guiding his physical and mental growth and development. From his first day at school, and increasingly as he grows older, he is surrounded by a new physical environment and is subjected to the influence of teachers and other individuals not connected with his home. His life becomes bound up with the educational system. This change requires many adjustments, some of which must be made at once and others more gradually, as he progresses from grade to grade. I cannot discuss at this time the educational aspects of the school child but must confine myself to the effect which the new contacts have on his health.

The basic health needs of the child are the same at every age period, but some of them call for special emphasis during the school years. The school should offer to the child every opportunity to attain the optimum condition of health and should protect him so far as possible from the hazards which act unfavorably on health. Let us consider a few of the situations in relation to school life which have a direct bearing on health.

In order to grow and develop normally, every child needs the proper food. The school may make its contribution in this particular by supplying a well-balanced meal for those children who do not go home for lunch. The preparation and serving of the lunch may also furnish an opportunity to instruct the child in food values and in desirable food habits. It may supply a practical demonstration of the formal instruction in the schoolroom. How many of you who are listening know about the lunch which your child eats at school? If he buys the food, does he spend his money for sweets and cold drinks or for nourishing food and milk? What is the choice offered him? Is someone trying to make a profit on the school lunch or is the food supplied at cost and selected for its food value? Parents might well interest themselves in these matters.

Every child should be given good care for his own body. In the early years this is done for him but, as he advances in age, he must learn to assume this responsibility for himself. The school may render real assistance, not only through specific instruction but through practical demonstration. Physical education and athletic departments have been established for this purpose. Are they being conducted in your child's school so that every pupil is learning the proper use of his body and the easy co-ordination of his muscles? Is the sports program conceived for the benefit of the whole school group or for the potentially successful athlete? Is proper consideration being given to the age of your child, or is his physical activity too advanced for his bodily development? Do the skills which he is acquiring have any relation to future values, and do they meet present needs? These are questions which parents might investigate.

The alternation of work and relaxation is essential to a healthy life. Do you know what your child's daily school schedule is? If his progress in studies is satisfactory you probably have not looked into the matter. If he is having a hard time with his lessons, do you know whether he is being pushed too hard with work at school or is spending too much time in other interests? I have said "he" in all references to the school child merely for convenience of expression, but the questions raised are just as pertinent to the girl as to the boy. Her school schedule needs an equal and intelligent scrutiny. She has the same academic requirements in studies, and she needs the same relaxation in her recreational program.

Right here one ought to ask what the child does out of school hours. Attention has been called to the fact that a large part of the child's time is spent under the influence and direction of the school, but the rest of the time is, theoretically at least, under the control of the parents. I say "theoretically" because in many instances the child is left to his or her own devices and the result may or may not be satisfactory from the point of view of health. We must remember that the child's life is a unit: work and play must each have its proper place in the whole day's program, and neither carried on to excess. Outside activities — parties, extra lessons, additional exercises — need to be considered in relation to the school schedule and used to supplement that schedule not to add a further load in a field which may be overburdened already. These matters are up to the parents. When one studies the daily routine of some children one is impressed with the fact that they have no free time — every hour of the day is filled with an engagement, so carefully planned that an appointment system is necessary. Some of these activities are desirable and furnish pleasure and relaxation to the child; others, however, are unnecessary and should be eliminated. Every child should have some time each day when he does what he wants to do without the pressure of outside domination. This can be accomplished only through thoughtful planning. The school must co-operate by not requiring homework for children under twelve years of age and by expecting only a reasonable amount of homework from older children.

Parents may make another contribution to the child's health by planning the right kind of week ends. Monday morning should find the child rested and anxious for the school week; yet the reverse is often the case. Every school principal will tell you that many children start the week more weary than they were on Friday night. Is your family week end planned for the benefit of the children or the adults? This is worth careful consideration.

Parents must assume full responsibility for one aspect of the child's life, that of ensuring an adequate amount of rest and sleep. There is some variation in the sleep requirements of different children, but it is safe to say that no child is in danger of getting too much sleep. The fact is that few children get enough sleep. Fatigue is an important factor in causing ill health, and fatigue in children dependent on lack of sleep is the background on which many troubles of the body and mind may develop. This is the time of year particularly when children are most likely to show the effects of too strenuous a program and too little rest. The short days with a relatively small amount of sunlight, the confinement indoors during most of the day, the pressure of competitive school life, the piling up of extra scheduled activities, all combine to produce fatigue and nervous tension. It is essential that sleep be adequate if health is to be maintained.

I have spoken thus far almost entirely of bodily health, but healthy minds are important also. One sometimes forgets how many new or different situations are presented to the child during school life. He must learn to recognize a constituted authority other than that of his parents, to act in harmony with a group, whether in work or play, to recognize an ultimate goal and be will-

*A "Green Lights to Health" broadcast given by Dr. Richard M. Smith, on February 28, 1940, and sponsored by the Public Education Committee of the Massachusetts Medical Society and the Massachusetts Department of Public Health.

ing to work hard to attain it, to subordinate immediate pleasure for a future, more enduring satisfaction. In short, he must learn to live in a world of people — to become a part of that world and to make his contribution to its well-being. If the training by his parents durthe preschool years has been good, these adjustments come naturally and without conflict, but if the early training has been faulty, school life may present many difficulties. The child who is doing badly in school may be having too hard lessons or too many outside activities, as has been suggested, but the explanation is quite as likely to be found in some emotional disturbance — he may feel himself out of place and misunderstood. The co-operation of the parents with the school is essential for a happy solution. The child who learns to live well with his school companions is started on an orderly and a useful life. The child who leaves school maladjusted to his environment begins life in the world with a handicap to be overcome, often with great difficulty.

* * *

Q. Dr. Smith, you have not said anything about the diseases which children often catch at school.

A. I am glad you mentioned that point. Children often do get diseases, especially colds, from contact with other children at school. Parents can be of real assistance in solving this problem. If every mother would be scrupulously conscientious about keeping her own child away from school when he had a cold, the source of infection would be eliminated. It is a strange observation that many mothers who are critical of a school situation where their own children are exposed to a cold are careless about sending their children with colds to school. It does not seem to be appreciated that one's own child may give a cold as well as get one.

Q. You spoke about the need for an adequate amount of sleep. Will you not say a little more about that subject.

A. Yes, I am glad to emphasize again the importance of rest and sleep. There are many temptations for the child to stay up late at night. Today the radio is perhaps the thing most often to blame; some programs, popular with the young child, come at an hour after he should be in bed and asleep. Some programs are so exciting that when they are finished sleep is impossible. I do not know of any way to meet this difficulty except to avoid these programs. But, if the mothers of the country acted together, something really constructive could be accomplished. Such united action is necessary, also, if the neighborhood bedtime is to be early enough for children to receive the hours of rest which they need.

Q. Is it not difficult to consider the child's whole daily program when the responsibility for his time is partly that of the school and partly that of the parents?

A. No, it is not difficult, but it does take thoughtful consideration. It requires sympathetic co-operation. The parents must know what the child's program is, and the school must know the individual capacities of the child. Both parents and school authorities may have to make adjustments in preconceived ideas to meet the circumstances. Each needs the help of the other. The child is the important person to be considered. It is worth making the necessary effort to maintain and improve his health.

DEATHS

HEWITT — WILLIAM O. HEWITT, M.D., of Attleboro, died April 27. He was in his sixty-fourth year.

Dr. Hewitt received his degree in 1900 from Harvard Medical School. He was a fellow of the Massachusetts Medical Society and the American Medical Association.

O'BRIEN — WALTER J. L. O'BRIEN, M.D., of Jamaica Plain, died May 1. He was in his sixty-seventh year.

Born in South Boston, he attended Boston Latin School and Harvard University. He received his degree from Harvard Medical School in 1898, and served his internship at the Rotunda Hospital, Dublin.

Dr. O'Brien was a fellow of the Massachusetts Medical Society and the American Medical Association and was a member of the West Roxbury Medical Society.

His widow and a cousin survive him.

PECK — MARTIN W. PECK, M.D., of Boston, died May 7. He was in his sixty-first year.

Born in Montpelier, Vermont, he attended Dartmouth College and received his degree from Harvard Medical School in 1915. For two years following his graduation he was assistant physician at Devereux Mansion, Marblehead, and from 1919 to 1921 was assistant physician at the Sheppard Pratt Hospital in Townsend, Maryland. He was resident physician at the Boston Psychopathic Hospital the following year, and chief of the outpatient department from 1922 to 1926. Dr. Peck was instructor in psychiatry at the Harvard Medical School from 1923 to 1937 and assistant psychiatrist at the Massachusetts General Hospital.

Among his affiliations were memberships in the Massachusetts Medical Society, the American Medical Association, the American Psychoanalytic Association, the American Psychiatric Association and the New England Society of Psychiatry.

His widow survives him.

WRIGHT — WILLIAM F. WRIGHT, M.D., of Portsmouth, Rhode Island, died April 11. He was in his sixtieth year.

Born in Fall River, he received his degree from Baltimore Medical College in 1908. Dr. Wright practiced in Fall River before moving to Portsmouth, Rhode Island, in 1930. He was a fellow of the Massachusetts Medical Society and the American Medical Association.

His widow survives him.

MISCELLANY

INTESTINAL TUBERCULOSIS

Hippocrates noted that there is an association between pulmonary and intestinal tuberculosis. But even to the present day the exact relation of pulmonary to intestinal tuberculosis has remained obscure. Light is shed on the subject by correlating the clinical with the pathological findings, as was done at Sea View Hospital where more than a 1000 cases of tuberculosis were autopsied. A summary of the article describing the study (Cullen, J. H.: Intestinal Tuberculosis: A clinical pathological study. *Quart. Bull. Sea View Hosp.* **5**:143–160, 1940), together with brief comments, follows:

1. A study of 1043 autopsied cases of tuberculosis is presented with an incidence of 734 cases, or 70.4 per cent, of intestinal tuberculosis.

The study included all cases of tuberculosis, both pulmonary and extrapulmonary, which were autopsied during a five-year period, 1934 to 1938.

2. Intestinal tuberculosis is less extensive and less frequent above the age of forty.

The greatest number of cases occurred between the ages of twenty and thirty-nine years — 76 per cent in this age group showed intestinal involvement. When cases of intestinal tuberculosis are divided according to the extent of intestinal involvement, it is found that in the older age groups, intestinal tuberculosis, when present, tends to be less extensive. The lower incidence and extent of intestinal tuberculosis in the older age group have never been satisfactorily explained.

3. Intestinal tuberculosis is more extensive and frequent in women and in Negroes than in men and Whites.

In the material studied, there were about twice as many men as women, and among these the incidence of intestinal tuberculosis was 74.6 per cent in the women and 68.2 per cent in the men.

The incidence in Whites was 66.4 per cent; Negroes, 77.3 per cent.

4. Although caseous pneumonic tuberculosis is the type of pulmonary disease most frequently associated with intestinal tuberculosis, the cases with acute miliary tuberculosis showed a surprisingly high incidence (63.8 per cent) of intestinal involvement.

Most workers believe that direct contact of the tubercle bacilli in the sputum on the intestinal mucosa is the most important single factor in producing intestinal tuberculosis. A few believe that hematogenous dissemination is the chief method. With that in mind, the cases studied were divided according to the character of their pulmonary disease.

The high incidence in acute miliary tuberculosis seems to indicate that the hematogenous route of intestinal involvement is much commoner than is generally supposed. One is also led to suspect that the bacilli-laden sputum that is swallowed often only modifies the extent and size of the intestinal ulcers and is not itself the cause of intestinal tuberculosis.

5. The incidence of caseous mesenteric lymph nodes and miliary foci in the liver and spleen increases with the severity of intestinal tuberculosis.

Caseous mesenteric lymph nodes were found in 43 per cent of the very far advanced cases. The high incidence of miliary foci in the liver (49.4 per cent) and spleen (47.8 per cent) is interesting when it is considered that only routine sections were taken — more careful search would probably have yielded a higher incidence.

6. Intestinal tuberculosis is most frequent in the ileocecal region.

In this series of 734 cases of intestinal tuberculosis the ileum was involved in 652 and the cecum in 555. Extension of the tuberculous process is more frequently analward than toward the stomach, which was involved in only 4 cases. The small intestine was involved alone more frequently than was the large intestine.

The character of the intestinal lesions varies just as in tuberculosis of other parts of the body. The earliest lesions are in the lymphoid tissue of the submucosa, principally in Peyer's patches. The area of caseation finally involves the mucosa and ulceration results. The healing process consists of fibrosis of the specific tubercles followed by epithelial regeneration. The necrotic material sloughs out and the contraction of the fibrous tissue tends to approximate the edges of the ulcer. The uninjured epithelial cells at the border of the ulcer creep in and finally cover the floor of the ulcer.

7. Perforation of a tuberculous ulcer occurred in 28, or 3.81 per cent, of the cases with intestinal tuberculosis. It occurred most frequently in the ileum.

Perforation caused a generalized peritonitis in 10 cases, a localized peritonitis in 16 cases. Three perforations were extraperitoneal. Twice, ulcers in the rectum penetrated into the perirectal tissues and once an ulcer in the cecum penetrated retroperitoneally. Perforation occurred most often in the ileum and next often in the appendix.

8. Generalized tuberculous peritonitis, except in those cases due to perforation of a tuberculous ulcer, is not related to intestinal tuberculosis.

Tuberculous peritonitis, not associated with intestinal tuberculosis, occurred in 52 cases.

9. The incidence and severity of intestinal tuberculosis are much less in those cases which have had pulmonary symptoms one to two years.

The frequency of intestinal tuberculosis is related to the duration of the pulmonary disease. The highest incidence of intestinal tuberculosis occurs in cases with pulmonary symptoms of one year to twenty-three months' duration before death. As the duration of pulmonary symptoms increases the incidence and severity of intestinal tuberculosis decrease. Just why cases of long duration should not develop intestinal tuberculosis in spite of persistently positive sputum is not known.

10. The incidence and severity of intestinal tuberculosis are directly related to the positivity of the sputum.

The frequency and severity of intestinal tuberculosis were correlated with the degree of positivity of the sputum. Except for those cases which were positive on concentration only, the incidence and extent of intestinal tuberculosis increase as the number of tubercle bacilli in the sputum increases. Cases that had a mean Gaffky count of VII-X had an incidence of 83.5 per cent intestinal involvement. Cases that were negative on concentration had an incidence of 40.4 per cent.

11. The symptoms of intestinal tuberculosis are frequently misleading and are often present in cases without any intestinal involvement.

Symptoms and signs may be bizarre, slight and easily overlooked. Symptoms became more frequent as the severity of intestinal involvement increased.

12. The diagnosis of intestinal tuberculosis based on roentgenograms was inaccurate in 29.2 per cent of the 113 cases studied roentgenographically and at postmortem.

Another writer found the intestinal x-ray unreliable in 52 per cent of his autopsy series of 67 cases. The autopsy fails to substantiate many cases diagnosed as intestinal tuberculosis on x-ray. It is admitted that pseudo filling defects seen on the x-ray may have been misinterpreted as evidence of organic disease, since fluoroscopy as recommended by Brown and Sampson was not done.

The other factor that accounts for some of the disagreement found between x-ray and autopsy is the fact that an attempt was made to diagnose tuberculosis of the ileum on x-ray. The x-ray criteria of tuberculosis of the ileum-dilatation, segmentation and stasis — are not so accurate as the criteria for diagnosis in the cecum and colon.

Reprinted from *Tuberculosis Abstracts,* May, 1940.

NOTES

Forty-four appointments to the teaching and research staff of the Harvard Medical School, effective at the beginning of the next academic year, were recently announced by the University, as follows: Emanuel B. Schoenback, M.D. Harvard '37, now at Harvard Medical School, instructor in bacteriology; Alan C. Batchelder, Ph.D. University of California '39, now at Johns Hopkins Hospital, research fellow in physical chemistry; Maurice M. Tolman, M.D. Harvard '27, of Boston, assistant in dermatology; Edwin V. Hill, M.D. Tufts '39, now at Massachusetts Memorial Hospitals, research fellow in legal medicine; Charles H. Burnett, M.D. University of Colorado '37, now at Boston City Hospital, assistant in medicine; John H. Dingle, M.D. Harvard '39, now at Children's Hospital, Boston, assistant in medicine; Herman Erlanger, M.D. Washington University '37, now at University Hospital, Ann Arbor, Michigan, assistant in medicine; Robert S. Evans, M.D. Harvard University '38, now at Boston City Hospital, assistant in medicine; William Parson, M.D. Columbia University '37, now at Massachusetts General Hospital, assistant in medicine; Conger Williams, M.D. McGill University '37, now at Massachusetts General Hospital, assistant in medicine; William P. Chapman, M.D. McGill University '38, now at Massachusetts General Hospital, Henry P. Walcott Fellow in Clinical Medicine; Arthur M. Bassett, M.D. University of California '38, now at University of California Medical School, San Francisco, research fellow in medicine; Henry H. Brewster, M.D. Harvard University '38, now at Boston City Hospital, research fellow in medicine; Joseph H. Burchenal, M.D. University of Pennsylvania '37, now at Boston City Hospital, research fellow in medicine; Richard V. Ebert, M.D. University of Chicago '37, now at Peter Bent Brigham Hospital, research fellow in medicine; Alfred F. Goggio, M.D. University of Toronto '38, now at St. Michael's Hospital, Toronto, Canada, research fellow in medicine; Marlow B. Harrison, M.D. Harvard '36, of San Francisco, research fellow in medicine; Sibley W. Hoobler, M.D. Johns Hopkins '38, now at University Hospital, Ann Arbor, Michigan, research fellow in medicine; John W. Howard, M.D. University of Pennsylvania '36, now at Pondville Hospital, Wrentham, Massachusetts, research

fellow in medicine; David A. Karnofsky, M.D. Stanford University '40, now at Stanford University Hospital, research fellow in medicine; Osler L. Peterson, M.D. University of Minnesota '39, now at University of Minnesota Hospitals, research fellow in medicine; James L. Whittenberger, M.D. University of Chicago '38, now at Department of Surgery, University of Chicago, research fellow in medicine; Daniel W. Badal, M.D. Western Reserve University '37, now at Boston Psychopathic Hospital, assistant in neurology; Richard B. Pippitt, M.D. Harvard '37, now at Massachusetts General Hospital, assistant in neurology; Lazarus Secunda, M.D. Columbia University '36, now at Boston Psychopathic Hospital, assistant in psychiatry; Robert H. Barker, M.D. Harvard University '34, of Boston, assistant in obstetrics; Otto E. Aufranc, M.D. Harvard '34, of Boston, assistant in orthopedic surgery; John A. Reidy, M.D. Harvard '34, of Boston, assistant in orthopedic surgery; Oscar S. Staples, M.D. Harvard '35, of Boston, assistant in orthopedic surgery; Charlotte L. Maddock, M.D. Boston University '29, now at Children's Hospital, Boston, research fellow in pediatrics; Donald L. E. Thurston, M.D. Vanderbilt University '37, now at Children's Hospital, Boston, assistant in pediatrics; Ernest M. Worden, M.D. University of Toronto '36, now at Children's Hospital, Boston, assistant in pediatrics; Walter R. MacLaren, M.D. Harvard '38, now at Massachusetts General Hospital, research fellow in pediatrics; Hudson Hoagland, Ph.D. Harvard '27, now at Department of Physiology, Clark University, research associate in physiology; Edward S. Lee, Jr., M.D. Meharry Medical College '37, now at Meharry Medical College, Nashville, Tennessee, research fellow in physiology; Hanns C. Schwyzer, M.D. University of Minnesota '39, of St. Paul, Minnesota, research fellow in physiology; James H. Wills, S.M. Medical College of Virginia '36, now at University of Rochester School of Medicine, research fellow in physiology; John R. Mote, M.D. Harvard '35, of Cambridge, Massachusetts, assistant in preventive medicine and epidemiology; Albert J. Sheldon, S.D. Johns Hopkins '37, now at Division of Public Health, University of North Carolina, Charles Follen Folsom Fellow in Preventive Medicine; Dwight E. Harken, M.D. Harvard '36, of Osceola, Iowa, assistant in surgery; Stanley O. Hoerr, M.D. Harvard '36, now at Peter Bent Brigham Hospital, assistant in surgery; Robert R. White, M.D. University of Rochester '37, now at Peter Bent Brigham Hospital, assistant in surgery; Charles L. Dimmler, Jr., M.D. Harvard '38, now at Peter Bent Brigham Hospital, assistant in surgery; and Horace E. Campbell, S.B. University of Nebraska '25, now at Harvard Medical School, research fellow in surgery.

The New England Society of Psychiatry held its annual meeting at Danvers State Hospital, Hathorne, on April 25. The following were elected to office: president, Dr. Roy D. Halloran, Waltham, Massachusetts; vice-president, Dr. George E. McPherson, Belchertown, Massachusetts; secretary-treasurer, Dr. Bardwell H. Flower, Boston; councilors, Dr. Charles H. Dolloff, Concord, New Hampshire, and Dr. George A. Elliott, Middletown, Connecticut.

CORRESPONDENCE

GERIATRICS

To the Editor: Your editorial, "Geriatrics," in the April 18 issue is particularly interesting to us here because the term, "geriatrics," was coined by one of our graduates, Dr. I. L. Nascher, of the class of 1885. And it is for this reason as well as for purposes of accuracy, that we call your attention to the following.

In 1928, the entire Annual Graduate Fortnight at the New York Academy of Medicine was given over to the topic, "Problems of Aging and of the Old," and you will find an account of the sessions in *Bulletin of the New York Academy of Medicine.* In *Annals of Medical History* (N.S. **10**:324–335, 1938) you will find a paper by J. T. Freeman on "The History of Geriatrics." On page 333, reference is made to Dr. Nascher and his coining of the word, geriatrics. Dr. Nascher himself has written a book, *Geriatrics* (Philadelphia: P. Blakiston's Son & Co., 1914).

You may be interested to know that Dr. Nascher is still living and is working on Staten Island.

HELEN BAYNE, *Librarian,*
New York University College of Medicine.

477 First Avenue,
New York, New York.

ARTICLES ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY, AMERICAN MEDICAL ASSOCIATION

To the Editor: In addition to the articles enumerated in our recent letter the following have been accepted:

Abbott Laboratories
- Ampules Ephedrine Sulfate — Abbott, 0.025 gm. (⅜ gr.), 1 cc.
- Ampules Gold Sodium Thiosulfate — Abbott, 0.075 gm.

Lakeside Laboratories, Inc.
- Ampules Caffeine with Sodium Benzoate — Lakeside, 0.24 gm. (3¾ gr.), 2 cc.
- Ampules Caffeine with Sodium Benzoate — Lakeside, 0.49 gm. (7½ gr.), 2 cc.

E. S. Miller Laboratories, Inc.
- Compressed Tablets Sulfanilamide — Miller, 5 gr.

Sharp and Dohme
- Elixir Propadrine Hydrochloride

E. R. Squibb and Sons
- Amniotin in Oil, 5000 international units
- Ephedrine Alkaloid — Squibb
  - Ephedrine Compound Inhalant — Squibb
  - Ephedrine Inhalant Plain — Squibb
- Ephedrine Sulfate — Squibb
  - Capsules Ephedrine Sulfate — Squibb, ⅛ gr.
  - Capsules Ephedrine Sulfate — Squibb, ¼ gr.
- Tablets Thiamin Chloride — Squibb, 10 mg.
- Tablets Thiamin Chloride — Squibb, 3 mg.
- Thiamin Chloride Solution, 5 cc., 10 mg.
- Thiamin Chloride Solution, 5 cc., 25 mg.
- Thiamin Chloride Solution, 5 cc., 50 mg.
- Thiamin Chloride Solution, 10 cc., 10 mg.

White Laboratories, Inc.
- White's Thiamin Chloride Tablets, 1 mg.

PAUL NICHOLAS LEECH, *Secretary.*

535 North Dearborn Street,
Chicago, Illinois.

REPORTS OF MEETINGS

SUFFOLK DISTRICT MEDICAL SOCIETY

A regular meeting of the Suffolk District Medical Society, held at the Boston Medical Library on January 31, was devoted to papers presented by the staff of the Children's Hospital.

The first speaker was Dr. James L. Gamble, and his subject "Certain Features of the Water and Salt Exchange." It was pointed out that the kidney mechanism for the maintenance of fluid balance and ionic equilibrium is a slowly acting one, whereas the transfer of water across the cellular barriers is a rapid one which temporarily compensates for osmotic changes. The interstitial fluid, which amounts to three quarters of the extracellular fluid, affords an excellent buffer for these changes and is consequently of variable volume.

Experiments on the sodium balance showed that there is an extreme variation in the urinary excretion of sodium while the intracellular ions are removed in essentially constant amounts. These measurements were interpreted as indicating a considerable fluctuation of the volume of extracellular fluid even under quite normal circumstances.

Dr. Louis K. Diamond presented the second paper on "Variability of the Clinical and Hematological Manifestations of Leukemia in Childhood." It was suggested that the bizarre presenting symptoms and subsequent course of these conditions in children make untenable the former classifications by the type and number of cells alone. The classic clinical picture of leukemia is often a late manifestation in this age group, whereas the chief complaint at onset may be pallor, easy bruising, bleeding from the alimentary tract, pain in the joints or abdomen, or merely anorexia and loss of weight. Consequently, Dr. Diamond recommended a reclassification by the clinician in addition to the hematologist, who not infrequently cannot properly classify the disease by its cytology alone.

As further support for his proposal, the speaker cited various animal experiments which have substantiated the claim that the leukemias are divisible into clinical groups. Heredity as an etiologic factor does not play the dominant role in human leukemia that it does in inbred mice. The report of familial cases, however, does seem to indicate some hereditary tendencies. A very important feature of leukemia in mice produced experimentally by inoculation is that living cells must always be transmitted, and it is these rather than the host cells which progress malignantly. Furthermore, the course and characteristics of the disease in such animals can be moderately well predicted by knowing the cell type, the manner and site of injection, and the condition of the host (infection, previous roentgen therapy and so forth).

Dr. Diamond concluded that experimental and human spontaneous leukemia have much in common and suggested, therefore, that the human disease may be considered to be a malignant process, that heredity plays a minor etiologic role in the spontaneous disease, and that a careful history and observation of the onset and course enables one to place most cases in several large categories similar to those proposed for the disease in mice.

Of 150 cases of leukemia observed at the Children's Hospital he was able to distinguish ten distinct groups of 6 to 12 cases each. Examples of four of these groups were given. In the first group were cases with only slight enlargement of the lymph nodes and spleen but with bleeding and anemia as outstanding manifestations. There were a rapid fatal course, a marked leukocytosis and a diffuse infiltration of all tissues with leukemic cells at autopsy. The patients in the second group had moderate enlargement of the lymph nodes and spleen at first but usually presented themselves because of anemia or abdominal pain. The course was one of rapid increase in size of the spleen and the abdominal nodes, with a high white-cell count and fever. The third type was characterized by an early resemblance to rheumatic fever and by ecchymoses. These children ran a more subacute course and revealed a normal or low white-cell count, with a few abnormal cells. There might be terminal anemia of an aplastic sort, which was explained by the postmortem finding of diffuse extensive infiltration of the bone marrow. The final major group often had a primary pulmonary complaint and then progressed slowly with moderate anemia and leukocytosis. Autopsy findings were usually marked by diffuse leukemic infiltration, particularly in the thoracic cage.

The next speaker was Dr. Allan M. Butler, who discussed "Apparent Ascorbic Acid Concentrations in Terms of Plasma, Red Cells and White Cells." Dr. Butler stated that low plasma ascorbic acid values are not necessarily indicative of deficiency of vitamin C but that high levels do rule out this condition. More accurate information concerning the state of vitamin C nutrition is provided by analyses of whole blood or the buffy layer of centrifuged whole blood.

The most instructive result of the study of the partition of ascorbic acid was that showing high values in the white layers of centrifuged oxalated blood. The ascorbic acid content of the platelets and white cells from patients with leukemia ranged as high as 140 mg. per 100 cc. In scurvy the concentration in platelets and white cells dropped to zero. In deficiency states the concentration of ascorbic acid in the platelets and white cells furnishes an index of vitamin C nutrition that extends beyond that provided by plasma values. If a whole-blood analysis is used as an index, the blood must be saturated with carbon monoxide before precipitation, in order to prevent oxidation of the ascorbic acid, and account should be taken of any elevation of the leukocytes due to infection or leukemia.

The final paper of the evening on the "Criteria for Ligation of Patent Ductus Arteriosus in the Light of the First One and a Half Years' Experience," by Dr. J. P. Hubbard and Dr. R. E. Gross, was delivered by Dr. Hubbard. It was stated that, on the basis of experience up to date, ligation of the ductus has proved of great value and is indicated in carefully selected cases. The diagnostic criteria were briefly reviewed. These consist primarily of the characteristic thrill and murmur. A bulge of the pulmonary conus may or may not be present in children. Confirmatory diagnostic signs, which, when present, are of great significance in the selection of patients for operation, appear if the shunt is large enough to throw an undue burden on the heart and circulation. These signs include pulmonary congestion seen by x-ray, peripheral signs of aortic regurgitation and, in the child, delayed physical development, the latter resulting from impaired systemic circulation. When the circulation is severely overburdened, the usual signs of congestive failure may appear.

The surgical technic developed by Dr. Gross consists of a left pleural approach with collapse of the left lung and dissection of the ductus.

Dr. Hubbard described the results in the first case. These included the disappearance of murmur and thrill, the return of the blood pressure to normal, gain in weight and so forth. Dr. Hubbard pointed out that the incidence of subacute bacterial endocarditis, as given in Dr. Maude Abbott's series and, more recently, in Dr. Bullock's series, does not represent the actual chance the patients have of developing this complication. Both these series are of selected cases gathered from the literature. The cases selected by Dr. Gross have all presented evidence of an undue strain on the heart. It is to be hoped that these cases will remain free of bacterial endocarditis, but it is appreciated that years of observation will be needed before this latter point can be definitely established.

Of the 9 cases operated on to date by Dr. Gross, 1 was associated with other anomalies; there was 1 postoperative death. Seventeen additional cases are known to have been operated on elsewhere throughout the country. Of these there were 2 postoperative fatalities. In the light of present knowledge and experience, ligation of the patent ductus arteriosus in those exhibiting cardiac insufficiency as a complication was recommended as a beneficial and reasonably safe measure.

WILLIAM HARVEY SOCIETY

A regular meeting of the William Harvey Society was held at the Beth Israel Hospital on February 9, with Dr. David Rapport presiding. The speaker of the evening was Dr. Alfred M. Richards, whose subject was "Kidney Function." Dr. Richards reviewed the history of the subject and of his own researches in the field. He also cited the evidence for his theory of the mechanism of kidney function, which, briefly, consists of a filtration through the glomeruli of all non-colloid constituents of plasma and the selective reabsorption of the threshold substances from the tubules.

Other studies of the speaker have proved that the glomerular filtrate is alkaline like plasma rather than acid like urine, and that the urinary flow is proportional to the blood pressure rather than to the blood flow. The latter was demonstrated by perfusing a rabbit's kidney in situ, while maintaining by a pump a constant flow despite changes of renal pressure.

NOTICES

BOSTON CITY HOSPITAL

The next staff clinical meeting of the Boston City Hospital will be held in the Cheever Amphitheater, on Thursday, May 23, at 11:30 a.m.

PROGRAM

Symposium on Vitamins.
- The Surgical Significance of Vitamin C. Dr. Charles C. Lund.
- Vitamin A Deficiency in Man. Dr. Harold J. Jeghers.
- Nutritional Polyneuritis. Dr. Arnold P. Meiklejohn.

PETER BENT BRIGHAM HOSPITAL

A joint medical and surgical clinic at the Peter Bent Brigham Hospital will be held on Wednesday, May 22, from 2 to 4 p.m. Drs. Robert Zollinger and C. A. Janeway will speak on "Jaundice."

Physicians and students are cordially invited to attend.

MEDICAL LIBRARY ASSOCIATION

The forty-second annual meeting of the Medical Library Association will be held at the University of Oregon Medical School, Portland, Oregon, on Tuesday, Wednesday and Thursday, June 25–27, under the presidency of Col. Harold W. Jones, of the Army Medical Library, Washington, District of Columbia. Hotel headquarters will be at the Heathman. The program will include talks on the literature of epidemiology of plague, tularemia and Rocky Mountain spotted fever, a symposium on investigations in local medical history, and problems in bibliography based on a study of terminology in the field of nutrition.

DEDICATION OF OSLER MEMORIAL

The old autopsy house where Osler worked at Blockley has been restored as the Osler Memorial Building, and will be dedicated on the grounds of the Philadelphia General Hospital, at Curie Avenue, near Thirty-Fourth and Pine streets, Philadelphia, at 2 p.m. on June 8.

Original furnishings, including the necropsy table, have been collected. The painting by Dean Cornwell, N.A., of New York City, entitled "Osler at Old Blockley," later to be hung in the building, will be on exhibition during the celebration.

There are facilities in the building for the housing and preservation of relics of old Blockley, as well as Osleriana. The committee would welcome any additions to this collection.

A cordial invitation is extended to those who are interested, and especially those who are planning to attend the meeting of the American Medical Association in New York City, June 10 to 14.

AMERICAN CONGRESS OF PHYSICAL THERAPY

The nineteenth annual scientific and clinical session of the American Congress of Physical Therapy will be held September 2–6, at the Hotel Statler, Cleveland, Ohio. Mornings will be devoted to the annual instruction course, and afternoons and evenings to scientific sessions. The seminar and convention proper will be open to physicians and qualified technicians.

For information concerning the seminar and preliminary program of the convention proper, address American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

SOCIETY MEETINGS AND CONFERENCES

CALENDAR OF BOSTON DISTRICT FOR THE WEEK BEGINNING SUNDAY, MAY 19

MONDAY, MAY 20
7 p.m. South Boston Medical Society. Harvard Club, Boston.

TUESDAY, MAY 21
*9-10 a.m. Arthritis clinic. Dr. Walter Bauer. Joseph H. Pratt Diagnostic Hospital.

WEDNESDAY, MAY 22
*9–10 a.m. Hospital case presentation. Dr. S. J. Thannhauser. Joseph H. Pratt Diagnostic Hospital.
*2–4 p.m. Jaundice. Drs. Robert Zollinger and C. A. Janeway. Peter Bent Brigham Hospital.

THURSDAY, MAY 23
*9–10 a.m. Cardiac clinic. Drs. H. Magendantz and A. Zetlin. Joseph H. Pratt Diagnostic Hospital.
11:30 a.m. Boston City Hospital staff clinical meeting.

FRIDAY, MAY 24
*9–10 a.m. The Origin, Diagnosis and Treatment of Pituitary Body Tumors. Dr. Oscar Hirsch. Joseph H. Pratt Diagnostic Hospital.

SATURDAY, MAY 25
*9–10 a.m. Hospital case presentation. Dr. S. J. Thannhauser. Joseph H. Pratt Diagnostic Hospital.

*Open to the medical profession.

MAY 21 — St. Francis Hospital (Hartford) alumni. Page 737, issue of April 25.

MAY 21, 22 — Massachusetts Medical Society. Annual Meeting, Copley-Plaza Hotel, Boston.

JUNE 4–6 — National Gastroenterological Association. Page 737, issue of April 25.

JUNE 4–7 — American Association of Industrial Physicians and Surgeons. Page 654, issue of April 11.

JUNE 7, 8 — American Heart Association. Page 469, issue of March 14.

JUNE 7–10 — American Board of Obstetrics and Gynecology. Page 608, issue of April 4.

JUNE 8 — Dedication of Osler Memorial. Page 862.

JUNE 8 and 10 — American Board of Ophthalmology. Page 719, issue of November 2.

JUNE 8–10 — American College of Chest Physicians. Page 781, issue of May 2.

JUNE 10 — American Medical Golfing Association. Page 824, issue of May 9.

JUNE 10–14 — American Medical Association. Annual meeting, New York City.

JUNE 10–14 — American Physicians' Art Association. Page 332, issue of February 22.

JUNE 12 — Harvard Medical Alumni Association. Page 781, issue of May 2.

JUNE 23–25 — Maine Medical Association. Annual meeting. Rangeley Lakes.

JUNE 25–27 — Medical Library Association. Page 862.

JUNE 27 — Pentucket Association of Physicians.

SEPTEMBER 2–6 — American Congress of Physical Therapy. Page 862.

OCTOBER 8–11 — American Public Health Association. Page 655, issue of April 11.

OCTOBER 21 — American Board of Internal Medicine, Inc. Page 369, issue of February 29.

DISTRICT MEDICAL SOCIETY

MIDDLESEX NORTH

JULY 31.

OCTOBER 30.

BOOKS RECEIVED FOR REVIEW

The First Five Years of Life: A guide to the study of the preschool child, from the Yale Clinic of Child Development. Arnold Gesell et al. 393 pp. New York and London: Harper & Brothers, Publishers, 1940. $3.50.

Arthritis: And allied conditions. Bernard I. Comroe. 752 pp. Philadelphia: Lea & Febiger, 1940. $8.50.

Chemotherapy and Serum Therapy of Pneumonia. Frederick T. Lord, Elliott S. Robinson and Roderick Heffron. 174 pp. New York: The Commonwealth Fund, 1940. $1.00.

Diabetes: Practical suggestions for doctor and patient. Edward L. Bortz. Second edition. 296 pp. Philadelphia: F. A. Davis Co., 1940. $2.50.

Let's Talk About Your Baby. H. Kent Tenney, Jr. Second edition. 115 pp. Minneapolis: University of Minnesota Press, 1940. $1.00.

Synopsis of Obstetrics. Jennings C. Litzenberg. 394 pp. St. Louis: C. V. Mosby Co., 1940. $4.50.

Introduction to Medicine. Don C. Sutton. 642 pp. St. Louis: C. V. Mosby Co., 1940. $3.25.

Juvenile Delinquents Grown Up. Sheldon and Eleanor Glueck. 330 pp. New York: The Commonwealth Fund, 1940. $2.50.

Specialties in Medical Practice. Edited by Edgar V. N. Allen. 2 loose-leaf volumes. 964 pp. New York and Edinburgh: Thomas Nelson & Sons, 1940. $25.00 set.

Principles of Orthopedic Surgery. James W. Sever. Third edition. 418 pp. New York: The Macmillan Co., 1940. $3.25.

The Diagnosis and Treatment of Diseases of the Peripheral Arteries. Saul S. Samuels. Second edition. 372 pp. London, New York and Toronto: Oxford University Press, 1940. $6.50.

An Introduction to Medical Genetics. J. A. Fraser Roberts. 266 pp. London and New York: Oxford University Press, 1940. $4.50.

BOOK REVIEWS

The Dysenteric Disorders: The diagnosis and treatment of dysentery, sprue, colitis and other diarrhoeas in general practice. Philip Manson-Bahr. 613 pp. Baltimore: William Wood & Co., 1939. $8.00.

This volume is based largely on the author's experience of thirty years of practice and study in the Orient and in London. The subject matter covers a wide range of conditions including bacillary and amebic dysentery, Asiatic cholera, celiac disease and some of the helminthic infections. The author, thoroughly versed in his field, may have underestimated the difficulties confronting less experienced men who would value a full expression of personal opinions and preferences.

In general, the therapy of these various disorders is presented from the standpoint of embracing all points of view. For the treatment of amebic dysentery preference is given to emetine or its modifications and to yatren, although fifteen or more drugs and other substances are considered. Among those relegated to a rank of lesser importance is carbarsone, although the effectiveness of this drug has been demonstrated to the satisfaction of American physicians.

Full consideration is given to various procedures for treating Asiatic cholera. Intestinal disinfection, at best a difficult undertaking, is included as one of the important principles in its treatment.

The author considers that the literature contains a welter of conflicting views concerning the etiology of sprue. He presents the conception that the true etiology is a specific virus affecting the intestinal mucous membrane, this interpretation being based on clinical observations. In treatment, considerable emphasis is placed on the difficulties encountered in selecting a suitable diet from the many which have been recommended. Liver soup in small daily amounts is included in one set of diets, and liver extract is added to some of the high-protein diets, using the equivalent of five eighths of a pound of liver daily. Among the many pages devoted to the dietary treatment of sprue, the reader should direct his attention to the paragraph concerning the parenteral administration of liver extract.

Schistosomiasis appears under the designation of bilharziasis and is accompanied by an inaccurate consideration of dates that are essential.

The appendices, enriched by some excellent illustrations, describe clearly some of the important protozoa and bacteria and the laboratory procedures which are useful in diagnosis. An extensive bibliography is presented, but it does not fully solve the difficult problem of well-selected representation.

Supervision in Public Health Nursing. Violet H. Hodgson. 376 pp. New York: The Commonwealth Fund, 1939. $2.50.

This book is a set of admirable rules for the proper supervision of public-health nursing. One is not in a position to challenge the validity of Mrs. Hodgson's principles, which are based upon unusual opportunities of observation in what is known as the "field." It is the set of the author's mind, the whole unconscious atmosphere pervading the book, which engenders the perverse reaction that perhaps records, the clinic, the director, case conferences or even public-health nursing itself may just conceivably not be among the eternal verities of life requiring a "philosophy of supervision" (Chapter IV). In this as in any other field where there is a job to be done, it is to

be hoped that a man or woman may be found to do it without the inevitable necessity of such elaborately specific training as is demanded by Mrs. Hodgson.

The volume is replete with diagrams of the type so dear to the heart of the late Dr. Elmer E. Southard — little boxes labeled "board," "assistants to commissioner," "field nurse in charge" and so forth, connected by unmistakable straight and dotted lines. These are clear, specific and well planned, but not very interesting.

The results of Mrs. Hodgson's occasional incursions into the field of semasiology are not happy. "The original meaning of a Staff," she says (page 68), "is something to lean on." This is a good WPA doctrine, but as a matter of fact, the original meaning of "staff" is a cudgel, or a stick which shows its bearer to be a person of authority.

If this book were translated into German, its adherence to the idea of the *Führer Prinzip* — despite its frequent allusions to what the author terms "Democracy" — would be apparent and acceptable. This criticism is not intended necessarily to be derogatory.

Every supervisor of public-health nursing will do well to read and study this manual. If she can bring to her work in addition to Mrs. Hodgson's stern requirements a sense of humor and proportion, she will indeed be worthy of her hire.

Nursing Mental Diseases. Harriet Bailey. Fourth edition. 264 pp. New York: The Macmillan Co., 1939. $2.50.

This book is meant to be used as a textbook in nursing schools. Miss Bailey is admirably qualified for authorship of such a book by her years of experience in teaching the subject. A graduate of Johns Hopkins School of Nursing, she has been assistant superintendent of nurses at the Henry Phipps Psychiatric Clinic, Johns Hopkins Hospital, principal of the Training School for Nurses at the Manhattan State Hospital, New York City, a member of the Department of Medical Information and formerly nursing editor of the *International Journal of Public Health* and director of nursing education at Bellevue and allied hospitals in New York City.

The author has covered the ground of psychiatric nursing thoroughly; each phase of mental illness and disease is painstakingly dealt with, causes are delineated, symptoms discussed, and treatment and nursing care described.

The first chapters deal with the history of the care given the mentally sick from ancient times down to the present day, with its improvements in the understanding of mental ills and their relief, as well as preventive measures of mental hygiene. She also takes up the legal aspects of the subject, giving the legal definition of insanity and explaining the regulations for commitment and other legal procedures touching on mental disease.

From there she goes on to the development of the personality, an understanding of which she believes to be extremely necessary to good psychiatric nursing. This chapter takes up the definitions of such psychological terms as unconscious and subconscious mind, complexes, emotional conflicts, compensation and sublimation.

The book then gives specific causes for mental illness, a general classification of the different disorders and the difference between psychoses and the psychoneuroses, before taking up a detailed account of the symptoms of each of these illnesses.

There is a chapter which discusses the qualification for mental nursing, the handling of patients, the administering and preparation of foods for different types of patients and the care of everyday functions, bedsores, convulsions and the like. There is also one entitled "Dangers and Precautions — Accidents and Emergencies," in which Miss Bailey gives warnings for the dangers to be watched for and circumvented and describes first-aid treatment of all kinds, to be given before the doctor arrives.

The main portion of the book is, of course, given over to the description of the different psychoses and psychoneuroses, their symptoms and the treatment and nursing care needed in each. Alcoholism, epilepsy and mental deficiency are included in the list.

The last three chapters describe therapeutic measures, physiotherapy and mental hygiene. There are also a bibliography and a glossary in the back of the book which should prove helpful to student nurses.

Ophthalmology. Clio Medica 20. Burton Chance. 240 pp. New York: Paul B. Hoeber, Inc., 1939. $2.00.

Chance's book is an outline of the history of ophthalmology. Like other books in the Clio Medica series it is pocket size and inexpensive. It is necessarily brief and conspicuously devoid of lengthy references and annotations. Ophthalmologists, opticians and others interested in ophthalmology's background will find it very readable.

The material in the book is arranged in more or less chronological order and therefore permits either sequential or reference reading. The first chapter describes ophthalmic practice, so far as is known, in the Mesopotamian valley from 2250 B.C. on. Then follow in order similar descriptions of ophthalmology in Egypt, China, Greece and Rome, and a description of ophthalmology in the Arabian, Medieval, and Renaissance periods. The modern period, according to the author, begins with the establishment of the Vienna School in 1773. The second half of the book is devoted to the historical development of our knowledge in regard to individual diseases, phenomena, methods of treatment and particular sociologic aspects of ophthalmology. In bringing the material up to date numerous references are made to persons now living and still actively engaged in molding the historical course of ophthalmology.

Aside from learning many interesting facts, one gets certain general impressions from a survey of this kind. One thus obtains the impression that ophthalmology did not develop as a logical specialization of medicine but rather that it evolved from a sort of quackery and charlatanism. Instances like the founding of the Vienna School by the pupils of Baron Wenzel, an itinerant cataract coucher, are the cornerstones of ophthalmology. The recognition of the specialty as a legitimate and honorable branch of medicine is of relatively recent origin. At a time like the present when further basic changes in the practice of medicine are being contemplated, it is well for all ophthalmologists to have some knowledge of their specialty's history, and this book gives just enough and not too much for the great majority.

Biological Products. Louis Gershenfeld. 236 pp. New York: Romaine Pierson Publishers, Inc., 1939. $4.00.

This is a very valuable little reference work covering all biological products, with detailed descriptions of the manufacture, uses and efficiency of the commoner ones. The author has done an unusually fine job condensing essential information. The pictures are interesting, but seem to the reviewer to add to the expense of publication without adequate return. The book should be extremely useful to the general practitioner.